

Cross-Channel Relations in the Later Bronze Age

Relations between Britain, North-Eastern France
and the Low Countries during the Later Bronze
Age and the Early Iron Age, with particular
reference to the metalwork

Part i

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To
My Parents

PREFACE

These volumes of BAR are my 1978 Oxford University D. Phil. thesis and bear its title as their subtitle. I have made no significant changes to the text of the thesis, which incorporates only material which became available to me up to September 1977; a few references which I consulted in proof or typescript have been quoted in their published form. Since I submitted the thesis in October 1978 I have had neither the leisure, nor the facilities, to amend or amplify its contents.

In addition to reiterating the acknowledgements in the Introduction, I must thank the editors of BAR for accepting this work for BAR and my examiners, Jay Butler and David Coombs, for their generous encouragement. I am very grateful to Kate Gard who has expedited publication by performing the laborious task of making the index.

Edinburgh
November 1979

INTRODUCTION

This work grew out of an undergraduate special-subject course on the later Bronze Age in Britain and Europe taught by Jeffrey May at the University of Nottingham in 1972/73; he directed me to Oxford where Barry Cunliffe, who had fostered my earlier interest in archaeology, facilitated my research at the Institute of Archaeology. My initial interest had been in all aspects of the contacts and contrasts between Britain and the Low Countries at the transition from the Bronze Age to the Iron Age and their extension back to the Middle Bronze Age 'ornament horizon', but closer inspection of the problem led to a decision to concentrate on the metalwork. Evidence of settlements was distributed unevenly and the British pottery sequence, on which others were at work, did not yet appear sufficiently well-defined to warrant detailed comparison with the continent. Sequences of metalwork were available on both sides of the Channel and the distribution of metalwork, mostly found outside scientific excavations, was less reliant on what may be termed the 'distribution of archaeologists', than ceramic, burial, settlement and environmental evidence, dependent on excavation for its recovery.

As metalwork became the principal source of evidence it became clear that the area of study had to be extended into north-eastern France where workers such as Blanchet, Gaucher, Mohen and Verron had begun in the late sixties systematic examination of material largely untouched since the days of Breuil, Coutil and Déchelette. Study of relations between Britain and north-eastern France was also desirable because it would complement the work of Butler, who used Sprockhoff's syntheses of the Nordic Bronze Age to examine relations between Britain and northern Europe, and of Burgess, who used Briard's synthesis of the Breton Bronze Age to examine relations between Britain and north-western France. Butler had not treated Belgian material in detail, so Belgium was included in the area of study and the Netherlands were included to allow incorporation of Butler's subsequent publications on the Dutch Bronze Age. The area of north-eastern France to be studied was that north of the Marne valley and west to the Seine valley, defined as including the following départements: Aisne, Eure, Nord, Oise, Paris, Pas-de-Calais, Seine-Maritime, Somme, and the components of the old Seine-et-Oise: Essonne, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne, Val-d'Oise and Yvelines. The Ardennes département appears to be devoid of relevant material. The chronological range goes down to the end of Ha D from the early part of the Middle Bronze Age, though some aspects of the transition from the Early Bronze Age to the Middle Bronze Age are treated, but not all types current during the early part of the Middle Bronze Age.

I have employed the conventional chronological framework for the relevant areas combined into a single sequence of numbered phases from MBA1 to EIA1. While it is current practice to name the various phases of regional sequences after important finds, employment of these names to define divisions covering

several areas would create cumbersome compound titles of obscure significance. For the same reason, I have employed the Reinecke terminology as far as possible for central Europe, without prejudice to local sequences, to avoid having to define local terminology for each region. My own phases are defined at the head of each relevant chapter. I have attempted to align the chronologies of France, central and northern Europe in Chapter 2.

For each phase the principal types of metalwork will be examined in their chronology and distribution to determine the extent of their contribution to relations between Britain, north-eastern France and the Low Countries. Well-known types may be dealt with briefly or even omitted, while types whose chronology is debatable or the extent of whose distribution has not been fully recognised are discussed at greater length. Little consideration is given to gold in anticipation of the publication of J. J. Taylor's thesis. Where the distribution of a particular type in one region has been published, I have sought to complement this by preparing my own list of finds of that type in other regions in order to map the overall distribution; sometimes it is only possible to show the precise distribution of a type outside the region where it is most common. My lists were prepared by search of the literature and of the museums listed below. Inevitably, hoards had to be the chief source of information. for all single finds, especially of common types, could not be traced, and I do not pretend that my lists are exhaustive but hope that they provide an adequate picture of the various distributions. Coverage of hoards has been uneven. I have seen most hoards from south-eastern England published or unpublished; Rowlands (1976) provides details of Middle Bronze Age hoards and I consulted the catalogue of Coombs' thesis (1971) for Late Bronze Age hoards. J. J. Butler kindly furnished a list of Dutch hoards and I have relied heavily on his publications for Dutch material. I have tried to include in the catalogue as many Dutch and Belgian hoards as possible. For north-eastern France Gaucher and Mohen (1974) provide information on hoards from Nord, Pas-de-Calais and Somme, while Blanchet's thesis (1975b) provided details of hoards from the Oise and J.-P. Mohen kindly allowed me to see the notes for his book on the Bronze Age in the Paris region. I have seen several important hoards from Upper Normandy but for this region and for the Aisne I have had to rely more on modern summary accounts. I have not attempted comprehensive integration of old lists of French finds, such as Déchelette's Appendice I to vol. II of his Manuel d'archéologie.

The catalogue includes accounts of those hoards which I have examined and derived useful information from, of hoards whose published discussion can be elaborated, of hoards whose documentation or discussion can conveniently be relegated from the text and of a few other important finds. Some Middle Bronze Age hoards from outside the area of study have been included in the catalogue and a few French finds adjacent to the border of this area, mainly from the important site of Fort-Harrouard, Eure-et-Loir, have been included in the lists. The base map for the distributions omits the southernmost part of the Essonne département, but this area has produced no significant finds.

After detailed treatment of the metalwork, there follows more cursory discussion of the pottery, burials and settlements in the relevant regions. The organisation of metalworking and the deposition of metalwork are also

considered. Environmental evidence is omitted.

I have taken no account of publications which became available to me after September 1977. The most important study to have appeared subsequently is J.-P. Mohen's L'Age du Bronze dans la région de Paris, but I was able to incorporate material from Mohen's notes for this book. Barry Cunliffe allowed me to see proofs of the second edition of his book on Iron Age communities in Britain (1978). Richard Bradley let me include material from his article on field-systems (1977-78) and his book on prehistoric settlement in Britain (1978); he also kindly provided information about several unpublished sites. Mrs. M. A. Brown allowed me to consult the card index of J. D. Cowen. Other unpublished information was provided by: J. Barrett, J.-Cl. Blanchet, D. Britton, C. Burgess, J. J. Butler, T. Champion, D. Coombs, P. W. Dixon, M. Ehrenberg, A. Ellison, N. Freidin, C. Gingell, B. Lambot, A. J. Lawson, D. Longley, A. MacCormick, S. Needham, J. P. Northover, M. O'Connell, S. M. Pearce and G. J. Verwers. Many friends and colleagues at home and abroad facilitated my work by gifts of their publications and Nick Freidin kindly bought some books in France on my behalf.

I am most grateful to all those mentioned in the preceding pages for their assistance and encouragement. I should also like to thank my supervisor, Barry Cunliffe; Dennis Britton, who read some early drafts; Richard Bradley, who has read the entire manuscript and provided many stimulating ideas; John Barrett, who read a draft of my section on pottery. In the Institute of Archaeology, Mike Rouillard gave generous advice and assistance in the preparation of the illustrations; Bob Wilkins and Nick Pollard did much photographic work; Chris Lewis typed a seemingly interminable manuscript with critical efficiency and patient equanimity. The editors of BAR provided duplicated copies of the base map. I have been privileged to work in the Ashmolean Library which has provided all save a handful of the references in the bibliography. I am also grateful for the use of the library of the Society of Antiquaries of London. Financial support was provided by a DES Major State Studentship and a grant from the Oxford University Meyerstein Fund. My greatest debt is expressed in the dedication.

During my research I visited the following museums to whose authorities I am grateful for their cooperation. Inclusion in this list does not imply that all relevant material was examined or was available. Doubts have been expressed about the integrity of certain collections, e.g. the Hasse collection in Antwerp Museum (Desittere 1972a). Abbreviations employed in the work are included where appropriate.

England

- Alnwick Castle Museum.
- Buckinghamshire County Museum, Aylesbury.
- Powell-Cotton Museum, Birchington.
- Art Gallery and Museum, Brighton.
- Moyses Hall Museum, Bury St. Edmunds.
- CMAE Cambridge University Museum of Archaeology and Ethnology.
- Royal Museum, Canterbury.
- Carisbrooke Castle Museum.
- Colchester and Essex Museum, Colchester.

- Dorset County Museum, Dorchester.
 Elveden Estate Museum.
 Thurrock Local History Museum, Grays.
 Public Library and Museum, Herne Bay.
 Ipswich Museum.
 Jewry Wall Museum, Leicester.
 City and County Museum, Lincoln.
- BM British Museum, London.
 Museum of London (incorporating the collections of the Guildhall
 Museum and the London Museum).
 Castle Museum, Norwich.
 Castle Museum, Nottingham.
- Ash Ashmolean Museum, Oxford.
 City Museum, Peterborough.
 Southsea Castle Museum, Portsmouth.
 Salisbury and South Wiltshire Museum, Salisbury.
 God's House Tower Museum, Southampton.
 Prittlewell Priory Museum, Southend.
 Central Library, Watford.
 City Museum, Winchester.
 Worthing Museum.

Scotland

National Museum of Antiquities, Edinburgh.

France

- Musée Boucher de Perthes, Abbeville.
 Musée de Picardie, Amiens.
 Musée Départemental de l'Oise, Beauvais.
 Musée Vivenel, Compiègne.
 Musée Municipal, Evreux.
 Musée Municipal, Louviers.
 Musée de l'Homme, Paris.
 Musée Départemental des Antiquités de la Seine-Maritime, Rouen.
- MAN Musée des Antiquités Nationales, Saint-Germain-en-Laye.

Belgium

- Museum Vleeshuis, Antwerp.
- MRAH Musées Royaux d'Art et d'Histoire, Bruxelles.
 University Museum, Ghent.
 Musée du Monde Souterrain, Han-sur-Lesse.
 Musée Curtius, Liège.
 Musée Archéologique, Namur.

Netherlands

- RMOL Rijksmuseum van Oudheden, Leiden.
 Rijksmuseum, G. M. Kam, Nijmegen.
 The Collections of the Provinciaal Museum, L. van Drenthe, Assen, and
 the Groninger Museum voor Stad en Lande, Groningen, were closed
 when I visited them.

CHAPTER 1

PREVIOUS RESEARCH

PREVIOUS RESEARCH INTO RELATIONS BETWEEN BRITAIN AND THE CONTINENT

Most general studies of the Bronze Age and the Iron Age in the British Isles take account of relations with adjacent parts of the continent. The significance of the "Personality of Britain" in Fox's influential work (1932) was "its influence on inhabitant and invader", often defined by reference to Bronze Age metalwork. The chronological systems of these general studies are usually derived, at least in part, from continental relations so some works relevant to the present section will be mentioned under the heading of chronology (see Chapter 2). This section will be concerned with more specific studies in the continental relations of the British Bronze Age and Early Iron Age, with particular reference to northern France and the Low Countries.

The foremost study must be that by Butler (1963a) which dealt with the relations between the British Isles, the Netherlands, northern Germany and Scandinavia during the Bronze Age. This began with the earliest metal and ended at the close of Ha B/MV. While a certain amount of evidence from northern France and Belgium was noted, original research began on the lower Rhine. Most important bronze types, and some gold, were examined, often in considerable detail (*ibid.*, 9-190); relations were divided into several phases (*ibid.*, 191-230) which were set in a wider European context (*ibid.*, 231-244, pl. XXI). Like any scholar dealing with the Bronze Age of northern Germany Butler was particularly indebted to Sprockhoff (*ibid.*, 3) whose account of the relations between Lower Saxony and western Europe (1941) was seminal. Foreshadowed by Piggott (1949), Smith (1959, 148-164) recognised Nordic MIII parallels for a series of British objects, hitherto regarded as Late Bronze Age, which were recognised as Middle Bronze Age for the particular purpose of placing the Deverel-Rimbury culture in that period. Smith and Butler reached the same conclusions independently (Butler 1963a, 3). Allied to this, with particular reference to the Low Countries, was the recognition that certain continental finds of pottery resembling British forms (Dunning 1936b) belonged to a pre-Urnfield group whose disc-barrows and Hilversum urns were probably derived from southern Britain (Hawkes and Glasbergen 1953; Glasbergen 1957; Smith 1961). Certain related continental pottery has since been recognised as specifically of Cornish origin (ApSimon and Greenfield 1972, 365). The relation of British Late Bronze Age swords to northern Europe has been considered by Cowen (1952). The Late Bronze Age was considered more generally by Hawkes, with particular reference to gold (Hawkes and Clarke 1963; Hawkes 1976c). Influence from northern Europe during the Late Bronze Age has often been invoked in Scotland (Coles 1958-59; 1959-60, 17-18, 26, 40-45, 52-53) and in Ireland (Eogan 1964, 283, 317-320; 1974b, 93-95, 99-101; Herity and Eogan 1977, 213-214). Thrane's summary of his prolonged studies of the foreign relations of the Danish Late Bronze Age includes a rare critical analysis from the continent (1975, 233-235).

Little specific work has been done on relations with Belgium during the Bronze Age. Mariën has recognised affinities with northern France and Britain (1952, 268, *afb.* 248; 1973a) and Desittere has identified northern French and British Early, Middle and Late Bronze Age types (1973c; 1976).

It has long been recognised that the bronze industries of Britain and northern France were closely related. Evans' own collection made this obvious to him in the nineteenth century (1881, 483) and this was soon reinforced by Breuil's studies of the Somme valley material (1900; 1901; 1902; 1903; 1905; 1907; 1918-19; Childe 1940, 178). North-eastern France was crucial to the invasion which was said for many years to begin the Late Bronze Age in southern Britain. This was first enunciated by Crawford (1922), who took bifid razors, associated them with Deverel-Rimbury pottery and rectangular enclosures on the one hand, leaf-shaped swords, winged axes, wing-ornamented socketed axes, recurved bracelets, buckets, winged chapes, Llangwyllog buttons, bugle-shaped objects, tweezers and rings on the other, and, with a terminal date provided by the Llyn Fawr hoard (218), interpreted the whole complex as an eighth-century invasion of Goidelic Celts from the west-Alpine Lake Villages. This invasion was re-examined by Evans (1930), who dated it to c. 1000 B.C. and distinguished it from the later Hallstatt invasion which began the British Iron Age. He found the winged axe particularly characteristic both in southern Britain and northern France, along with the Carp's Tongue sword and bugle-shaped object, all of whose distributions he mapped (*ibid.*, *figs.* 1-3). Certain objects, such as the bugle, the hog's-back knife and the socketed knife were shown to be common to southern Britain and northern France and not to be Lake Village types. More extensive examination of the continental material by Savory (1948) distinguished the Carp's Tongue complex as a phenomenon of northern and western France distinct from the Ha B Lake Village material of the south and east. The Carp's Tongue complex was seen to follow in the tradition of the Atlantic province previously represented by flanged axes and palstaves. Though there was some overlap between Carp's Tongue and Lake Village material during Ha B, Savory placed the floruit of the Carp's Tongue complex in Ha C and Ha D since its distribution was complementary to that of Hallstatt material in eastern France. In Britain the Deverel-Rimbury culture of Wessex was distinguished from the Carp's Tongue complex of south-east England and the razors and palstaves associated with Deverel-Rimbury were derived from the north French Middle Bronze Age tradition.

In his discussion of the three pins found in a pot at Ramsgate (27), Hawkes (1942) defined the small group of Picardy pins representing a retarded Tumulus group in north-eastern France which migrated to Britain under Urnfield pressure and whose settlement was represented at Plumpton Plain. This movement introduced LBAI in Britain and preceded the west-Alpine/Carp's Tongue migration around 750 B.C. under Hallstatt pressure. This late Urnfield movement was represented in Picardy by such hoards as Dreuil (177) and Plainseau (178). In Britain it began LBAII and pushed the indigenous Deverel-Rimbury population out of south-east England to Wessex. The Ramsgate urn represented movement from the Low Countries, retarded Tumulus barrow-builders under Urnfield influence at about the same time as the Carp's Tongue movement. Glasbergen had not yet established the true nature of the so-called 'Deverel' urns on the lower Rhine, but Hawkes recognised their occurrence in the southern

Netherlands and Belgium and perceptively suggested that such pottery should have been in use in north-eastern France (*ibid.*, 44).

Smith took little account of the rich, but largely inaccessible, north French material in her study of the British Middle Bronze Age; she defined a hypothetical "eclectic region" in north-eastern France where ornaments were collected and thence transmitted to Britain (1959, 164) apparently on the basis of the pins, bracelets and neckring in the Villers-sur-Authie hoard (67).

During the 1960s the emphasis in the foreign relations of the British Bronze Age passed to Brittany. When Savory defined the Wilburton complex in detail he accompanied this with an account of related material, mostly in north-western France (1964-66, 183-187). The most significant contribution was that of Burgess (1968a) who defined Hawkes' stages of the British later Bronze Age by reference to the Breton sequence made available by Briard (1965). The Middle Bronze Age was dealt with elsewhere (1968b; 1969a; 1974, 200-204) with brief reference to the later Middle Bronze Age in north-eastern France, characterised by the Mont-Saint-Aignan hoard (61) (1968b, 13; 1969a, 151). Otherwise, relevant material from north-eastern France was rarely considered in detail (1968a, 13 n.42-43, 45, figs.1, 1, 6; 3, 3; 9, 4; 1974, 201 n.226, 203 n.240, 245, 247; 207 n.281; 208 n.286; 1976a 73; 1976b, 97 n.67).

In his studies of the British Middle Bronze Age, Rowlands devoted a separate article (1971a) to decorated bracelets and examined their relationship to the French Bignan group, defined by Briard, concluding that the British bracelets were imports. In his thesis he denied that the British palstave sequence had developed by the thirteenth century as Butler had suggested (1976, 147). In his section on relations between southern Britain and northern France (*ibid.*, 149-151) he recognised a unity which continued during the Late Bronze Age. He pursued the concept of an eclectic region and made much of the similarity between French and British palstaves. Although he illustrates several Norman hoards, such as Baux-Sainte-Croix (43), Gisors (47) and Livet (48) (*ibid.*, pls.52-53), he did not define, or appear to recognise, the specific Breton and Norman types in France or in Britain. Pointing to the lack of Penard material in Somerset and on the south coast, he suggested that the distinction between the Taunton phase and the Penard phase was regional rather than chronological.

In his recent work on the Welsh Late Bronze Age and Early Iron Age, Savory has regularly insisted on the importance of influence from central France through Normandy to Wales and the Marches (1971, 22-24, 27-28; 1976a, 14, 17-21, 44-47; 1976b, 246-250, 253) bringing, among other things, hillforts. The finding of the Dover hoard (108) has stimulated interest in relations with northern France (Coombs 1975b, 194).

The lower Rhine area and northern Germany has long been regarded as influential as the Early Iron Age in eastern England. This view may be traced to the use of Dutch material by Smith to provide comparison for the pottery from Scarborough (1927, 191, 199 fig. 40), repeated by Wheeler (1931, 30-33, fig. 23) with better drawings, by Dunning, of vessels which we can now tell to be heterogeneous in date and culture, including Middle Bronze Age urns (*ibid.*, fig. 23, 2-4, cf. Glasbergen 1954b, 102, fig. 58, 12). This was reinforced by Hawkes in his study of the Fengate pin (1943, 197-199) and in his

foreword to the Staple Howe report (Brewster 1963), in which the pottery (*ibid.*, 108-109) and razors (115-116) were said to represent immigrants from across the North Sea. Mariën's publication of much Ha C material from Belgium (1958) enabled origins to be found for most British Ha C types, horse-gear in particular (Burgess 1968a, 43), and provided a background for the introduction of Ha C swords into Britain and for the reflux of the Thames type onto the continent (Cowen 1967). Only at the very end of Ha D did north-eastern France become influential again (Jope 1961). Hawkes has recently provided a succinct survey of the conventional view of Britain's easterly relations at the end of the Bronze Age and the beginning of the Iron Age (1976c). Armorican socketed axes provide slighter evidence for westerly relations (Dunning 1959; Burgess 1968a, 28).

Champion (1975) emphasises the affinities of southern Britain to the Low Countries and north-western Germany with reference to settlement and subsistence evidence. This is sparse and ill-defined with the exception of triangular clay loom-weights (*ibid.*, 133, fig. 2); ceramic relations are assumed (*ibid.*, 131) and some material from Fengate compared to pottery from Goirle (*ibid.*, 136, fig. 3). This comparison and the bronze cup in the Welby hoard (158) are used to suggest an origin for conventionally "Iron Age" pottery forms as early as the tenth century. He shows clearly the transition from bronze-working to iron-working during the seventh century without any major incursions from the continent (*ibid.*, 138-141).

For many years British prehistory was visualised as a succession of invasions. A magisterial rebuke from Cambridge (Clark 1966; Hawkes 1966) represents what some (Savory 1976a, 14) consider an extreme rejection of foreign influence but the present generation, like the writer, approaches the later Bronze Age and Early Iron Age without preconceived notions of invasions or great desire to discern any. Hawkes has used the concept of "cumulative Celticity" to answer doubts about the existence of invasions while still accounting for the appearance of Celtic-speaking people in Britain (1973). This sees changes in prestige items, weapons and vessels, as representing the "access of new upper-class masters" (*ibid.*, 622), from the daggers of the Early Bronze Age to the coins of the Late Iron Age. These immigrants tended to settle in southern Britain and to be gradually absorbed by the indigenous population.

THE CHRONOLOGY OF BRITISH BRONZE AGE METALWORK, MAINLY IN LOWLAND BRITAIN

The first systematic account of the bronze objects of the Bronze Age in Britain and Ireland is that of Evans (1881). Nearly one hundred years later, there is still no better comprehensive handbook dealing with the whole range of known types. Evans included a list of hoards, many of which have not yet been published adequately (*ibid.*, 464-468). From associations in hoards and burials he was able to enumerate several divisions. The earliest was represented by flat and slightly flanged axes with thin knife-daggers. This was followed by axes with distinct flanges, tanged spearheads and thick daggers. Next appeared stop-ridge axes and palstaves. The final division was represented by socketed axes with a variety of other tools, socketed spearheads and swords. Most hoards contained objects of the last division (*ibid.*, 468-470). These divisions were incorporated into three main stages of the British Bronze Age. The first stage was represented by the first division, finds mainly in barrows, sometimes associated with stone objects. The second stage was represented by the second division, characterised by objects from the Arreton Down hoard. The third stage included the last two divisions, characterised by founders' hoards (*ibid.*, 473). This stage was considered as long as the first two together. This scheme, succinctly presented, was not formalised after the manner of Evans' continental contemporaries, but his divisions were reflected in the work of most British scholars in the fifty or sixty years after he wrote.

At various times Montelius dealt with the Bronze Age chronology of most parts of Europe. His treatment of the British Bronze Age (1908) was formalised compared to Evans' approach, a formalisation which most British scholars have eschewed. Montelius arranged the British material into five periods. Period I included Beakers, many stone implements and flat axes and tanged daggers of copper; this was explicitly Copper Age (*ibid.*, 3-17). Period II was the first of the true Bronze Age; it included thin-butted axes and low-flanged axes, riveted daggers, halberds and bracelets. Characteristic burial finds included: Hove, Aldbourne and Bush Barrow; hoards included Migdale and Knocknague (*ibid.*, 17-34). Period III included a variety of developed flanged and stop-ridge axes with palstaves, some looped; riveted daggers, some with solid butts; tanged and socketed daggers which we would now call spearheads; neck-rings, gold torques and Sussex loops. Burials were rare; hoards included: Grunty Fen, Plymstock, Arreton Down, West Buckland and Edington Burtle (*ibid.*, 34-39). Period IV was characterised by late palstaves, indented socketed axes, rapiers, early flange-hilted swords, lozenge-section chapes, tubular ferrules, simple razors, side-looped and basal-looped spearheads. A few burials mostly contained razors. Hoards included: Yattendon, Meldreth, Nettleham, Stibbard, Wallington, Nottingham, Taunton, Stogursey, Worthing, Guilsfield, Tarves and Auchtertyre (*ibid.*, 39-46). Period V contained winged axes, socketed axes, socketed hammers, tanged chisels, gouges, double-edged knives, Ha C swords, solid-hilted swords, Ha C and bag-shaped

chapes, bifid razors, shields, trumpets, lunate-opening spearheads, bugle-shaped objects, disc-and cup-headed pins, gold bracelets, Covesea bracelets and buckets. Imports were the Witham sword, the bracelet and adze in the Shoebury/Great Wakering hoard and Middle Bronze Age decorated bracelets. There were many hoards: Wallingford, Melbourn, Reach Fen, Heathery Burn Cave, Shoebury/Great Wakering, Broadward, Cumberlow Green, Minster Isle of Harty, Hoo, Thorndon, Wickham Park, Beachy Head, Ebberston, Roseberry Topping, Dalduff, Duddingston Loch, Grosvenor Crescent, Balmashanner, Point of Sleat and Dowris (*ibid.*, 46-58). The end of Period V was related to the appearance of Ha C iron swords, but these were dated by the earliest Italian iron swords to the ninth century. Period II was placed early in the second millennium (*ibid.*, 58-66).

Montelius conflated later Early Bronze Age material with Middle Bronze Age but he recognised a distinct phase containing Wilburton material and the importance of a Ha C swords. His absolute dates for the Early Bronze Age, which anticipated calibrated radiocarbon dates, prompted Arthur Evans to use faience beads to relate the British chronology to that of Egypt (1907-09, 122-127). Further criticism followed. In his study of the Cambridge region, Fox at first attempted to follow the chronology of Montelius but found it unsatisfactory. He rejected Period IV because of its paucity of axes and considered that all founders' hoards should be placed in Period V; this period should include all socketed axes and leaf-shaped swords which supplanted palstaves and rapiers (1923, 16-19). This equation of the appearance of socketed axes and leaf-shaped swords in founders' hoard with the beginning of the Late Bronze Age obscured the distinction of Montelius which we now consider valid and characteristic of the Cambridge area. Fox summarised his system as follows (*ibid.*, 20):

First Phase:

Transition Period	Flat axes and daggers, very rare.
Early Bronze Period	Flat and flanged axes, daggers.
Middle Bronze Period	Palstaves, rapiers.

Second Phase:

Late Bronze Period	Socketed axes, swords.
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The Transition Period was a Copper Age, Beaker phase (*ibid.*, 53). The true Bronze Age was divided into the Early, Middle and Late phases which were to become the conventional British terminology. The Early Bronze Period contained flat and flanged axes, halberds, riveted daggers and tanged spearheads (*ibid.*, 53-55). The Middle Bronze Period contained stop-ridge axes, developed flanged axes and most palstaves from shield-pattern to late forms. Rapiers and dirks, common around Cambridge, alongside looped spearheads were the weapons of this phase (*ibid.*, 55-57). The Late Bronze Period contained the whole gamut of socketed axes known from the Cambridge area; winged axes and a few palstaves, including the late form. All types of leaf-shaped sword were also placed in this phase alongside chapes, including Wilburton and Ha C forms. All spearheads without loops, and tubular ferrules, were included with shields, hammers, knives, chisels, gouges, razors, tweezers, buttons, bugle-shaped and miscellaneous objects from hoards (*ibid.*, 57-62). Hoards were listed separately (*ibid.*, 323-324). Fox carried the

Late Bronze Period down to the beginning of La Tène in his absolute chronology (*ibid.*, 20).

Childe included brief accounts of the British Bronze Age in his general study of 1930. He used the Early/Middle/Late division related to the Únětice/Tumulus/Urnfield sequence of central Europe. The British Early Bronze Age was characterised by Beakers and Food Vessels with their associated metal implements, flat axes and halberds (1930, 153-167). The Middle Bronze Age contained a variety of cinerary urns with palstaves, ogival daggers, rapiers, looped spearheads, knobbed and socketed sickles, some razors and ornaments (*ibid.*, 186-191). During the Late Bronze Age intrusive groups appeared using Deverel-Rimbury urns and hoards, especially founders' hoards, became common. New types were introduced: winged and socketed axes, leaf-shaped swords and bugle-shaped objects. Also current were gouges, chisels, knives, bifid razors, chapes, pegged spearheads with leaf-shaped blades and lunate openings, sunflower pins, shields, trumpets, buckets and cauldrons. The Late Bronze Age began with Ha A types but was somewhat retarded; it continued through the Hallstatt period to be replaced by the Iron Age at the beginning of La Tène.

The years around 1930 were a period of synthesis in British prehistory. On the occasion of the First International Congress of Prehistoric and Proto-historic Sciences in London in 1932, a handbook of British Archaeology was published. The scheme of Bronze Age Chronology used in this handbook reflected the divisions used by Fox (Handbook 1932, 30-36). His two phases and four periods were retained. The Transition Period became Early Bronze equivalent to MI and Reinecke A; Early Bronze became Middle Bronze A equivalent to MII and Reinecke B; Middle Bronze became Middle Bronze B equivalent to MIII and part of MIV, Reinecke C and part of D. In the second phase, Late Bronze was equated with part of MIV and MV, Reinecke D and E, i.e. Ha A. The Late Bronze Period persisted to a time contemporary with continental late Hallstatt.

In the same year as the Congress was published a more detailed survey of British archaeology (Kendrick and Hawkes 1932). Kendrick added little to previous accounts of the Early Bronze Age: flat and flanged axes, tanged and riveted daggers, tanged and early socketed spearheads, and the Middle Bronze Age: palstaves, rapiers and side-looped spearheads (*ibid.*, 116-118). Hawkes' survey of Late Bronze Age metalwork was more substantial (*ibid.*, 119-138). He began by following Fox in his rejection of the Montelius chronology and emphasised the unity of the Late Bronze Age characterised by the appearance of new types and founders' hoards (*ibid.*, 119). These types were enumerated: pegged, basal-looped, barbed and lunate-opening spearheads, socketed axes, winged axes, late palstaves, leaf-shaped swords, Carps' Tongue swords and Ha C swords, associated chapes and ferrules, gouges, chisels, hammers, anvils, socketed sickles, double-edged knives, razors, various ornaments and objects of sheet bronze (*ibid.*, 121-130). In his discussion of hoards, Hawkes distinguished three main groups in lowland Britain. The first included U-type swords, lozenge-section chapes, early socketed axes, barbed and lunate opening spearheads. Characteristic hoards included Nettleham, Wilburton and Broadness (*ibid.*, 130-133). The second included Carp's Tongue swords, winged axes, socketed axes with wing ornament,

bugle-shaped objects, bag-shaped chapes, buttons, bracelets, pins, knives, double-edged, single-edged and hog's-back, tanged sickles, gouges, chisels, hammers, razors and cauldrons. Characteristic hoards included Minster, Beachy Head and Addington (*ibid.*, 133-134). The third comprised similar hoards without Carp's Tongue swords and winged axes but, especially, with Ewart Park swords. This was illustrated by the Bexley Heath hoard (*ibid.*, 134-135). The second and third groups were identified with invaders from the west-Alpine area via northern France who established themselves in the lowland zone, while older types continued in use in the highland zone (*ibid.*, 135). At that time Ha C material was known only in hoards from south Wales (*ibid.*, 137-138) and the lowland bronze industry was seen as lasting to the late Hallstatt period contemporary with Deverel-Rimbury pottery (*ibid.*, 143-145).

The beginning of the Second World War allowed pause for further synthesis and Childe produced his account of the 'Prehistoric Communities of the British Isles' (1940), a single scholar's work with few peers and no recent successor. He retained the conventional Early, Middle and Late Bronze Age divisions but introduced six phases (*ibid.*, 10). His first phase, associated with Beakers, was characterised by flat and hammer-flanged axes, triangular daggers, early halberds and sheet gold (*ibid.*, 112-118, 163). The phase belonged to the Early Bronze Age. Phase 2, Middle Bronze Age 1, included cast-flanged axes, grooved, ribbed and ogival daggers and tanged spearheads in hoards such as Arreton, Plymstock, Westbury and Migdale (*ibid.*, 163-165). The characteristic types of Phase 3, Middle Bronze Age 2, were the first socketed spearheads and looped spearheads, stop-ridge axes and palstaves, dirks and rapiers (*ibid.*, 165-168). Phase 4 begins the Late Bronze Age which is divided into three phases. The appearance of founders' hoards prompted Childe to speak of an "industrial revolution" (*ibid.*, 168). In Late Bronze Age 1 socketed axes, leaf-shaped swords and pegged spearheads appeared alongside developed palstaves, looped spearheads and rapiers (*ibid.*, 168-171). Phase 5, Late Bronze Age 2, is represented by Carp's Tongue swords with bag-shaped chapes, winged axes, socketed axes with wing ornament, bugle-shaped objects, hog's-back knives and, perhaps, bifid razors. These intrusive types are found only in lowland Britain, while earlier traditions persisted in the highlands (*ibid.*, 171-172). The sixth phase, Late Bronze Age 3, included Hallstatt types, especially swords and chapes (*ibid.*, 172). Sheet bronze, a variety of specialised tools and clay moulds appeared during the Late Bronze Age (*ibid.*, 172-176).

A few more specific studies may be mentioned. In 1938 Piggott collected together Early Bronze Age material from Wessex, including bronzes from burials and hoards (1938). In the first of a series of important studies, Cowen identified the first leaf-shaped flange-hilted bronze swords to appear in Britain and placed them in their continental context (1951). He took these to represent the beginning of the British Late Bronze Age (*ibid.*, 209) while pointing out that the conventional index of this, the simultaneous appearance of swords and socketed axes, had not yet been demonstrated. The typology and chronology of the daggers of the Wessex Early Bronze Age were established by ApSimon (1954). Greater substance was given to the Middle Bronze Age by Butler and Isobel Smith's study of razors (1956) and Margaret Smith's more wide-ranging study (1959). The chronology of sheet bronze vessels in the

British Isles was established by Hawkes and Margaret Smith (1957). Savory first defined a distinct phase represented by the contents of the Wilburton hoard (1958a, 28-34).

In 1960 Hawkes produced a revised "Scheme for the British Bronze Age". This is the basis of most subsequent chronologies, at least for southern Britain, but was never published, as his Iron Age scheme was, and is available only in typescript.

During a Copper Age contemporary with the use of Beakers, first thick-butted axes and tanged flat daggers, then halberds, then thin-butted axes and riveted flat daggers, were produced. Early Bronze 1 was characterised by thin-butted axes, halberds, awls, riveted daggers and armlets, all of bronze. In Britain and Ireland this was the First A industry with Wessex I and Bush Barrow daggers. Early Bronze 2 was the B industry with Wessex II, ogival daggers, pins, flanged axes, tanged, socketed and looped spearheads. In Middle Bronze 1 the First C industry appeared with basal-looped spearheads, developed Irish spearheads, dirks and flanged axes. The earliest palstaves represented the First D industry. Middle Bronze 2, Deverel-Rimbury in southern Britain, continued the D industry, Second D, with later palstaves, early socketed axes, knobbed sickles, bifid razors and a variety of ornaments. The Second C industry produced rapiers and flanged axes. The first swords appeared at the end of this phase. Middle Bronze 3 continued insular production of rapiers and spearheads with the Third C industry but the southern E industry developed transitional palstaves, socketed sickles and leaf-shaped swords. Late Bronze 1 introduced lead bronze, clay moulds and founders' hoards. The First F industry produced the tools, weapons and other equipment found in the Wilburton and related hoards. Late Bronze 2 saw the introduction of sheet bronze vessels, Scandinavian contact with Ireland and intrusive Covesea bracelets. The Second F industry produced regional types of socketed axes, Ewart Park swords, late palstaves and plain spearheads. Large highland hoards were Duddingston Loch and Dowris. The lowland G industry was characterised by wing-ornamented axes, winged axes, Carp's Tongue swords and a similar variety of tools and horse-gear to that in the highlands. The final Late Bronze 3 phase saw a Third F industry with Ha C types, swords, chapes, razors, pins and phalerae. Local developments gave B2 cauldrons; Sompting axes and the first iron objects. This last phase of bronze working was succeeded by late Hallstatt intrusions, the First A cultures of the British Iron Age.

Since 1960 the most notable exponent of the chronology of British Bronze Age metalwork has been Burgess. The data of his researches (1968a, n.1), which document his numerous and valuable distribution maps, are mostly unpublished. Burgess has defined his terms of reference (1969b), retaining the tripartite division of Early, Middle and Late. The Wessex culture is Early Bronze Age with flat and flanged axes, daggers and knives, tanged and partially socketed spearheads. The Deverel-Rimbury culture is Middle Bronze Age with palstaves, dirks, rapiers and fully socketed spearheads. Leaf-shaped swords, socketed axes and pegged spearheads were all Middle Bronze Age innovations, though regular products only in the Late Bronze Age. This was characterised by the use of lead bronze in the Wilburton industry of southern Britain. Middle Bronze Age traditions persisted much longer in the north (*ibid.*, 22-24).

In the study of metalwork the most substantial contribution thus far by Burgess is his study of the British Later Bronze Age and its correlation with Briard's chronology of the Bronze Age in Brittany. Lists of types are provided for northern France, England and Wales (1968a, 34-44) and correlation made with Scotland and Ireland (*ibid.*, fig. 20). The Penard phase has early Urnfield imports, mainly swords, pegged spearheads, Enfield spearheads, transitional palstaves, early socketed axes of insular manufacture, socketed sickles, notched rapiers and insular leaf-shaped swords with flat or flanged hilts (*ibid.*, 3-9, 34-35, figs. 1-7). The Wilburton phase includes Wilburton swords and a variety of pegged spearheads with associated chapes and ferrules late palstaves, slender and indented socketed axes and the variety of miscellaneous material present in the Wilburton and Isleham hoards (*ibid.*, 9-17, 36-37, figs. 8-10). The Carp's Tongue complex included eponymous swords with bag-shaped chapes, hog's-back knives, bugle-shaped objects, winged axes, south-eastern and faceted socketed axes, double-edged knives, chisels, gouges, pegged spearheads and miscellaneous bric-à-brac (*ibid.*, 17-18, 38-39, figs. 13-14). In northern England different axe forms were common and some earlier types were still in use. The Ewart Park sword was common to the whole of Britain and Ireland (*ibid.*, 19, 39-40, fig. 12; 17, 1). In south Wales and adjacent areas a local axe form was dominant and from this area, through the Thames valley, a separate group of hoards, containing mainly weapons, was characterised by barbed spearheads (*ibid.*, 21, 40-41, figs. 15-16; Burgess, Coombs and Davies 1972). Ha C innovations were new forms of sword, chape, razor and horse-gear with a few iron objects. Local sword types developed under Ha C influence and local axes under Armorican influence (Burgess 1968a, 26-33, 42-44, figs. 17, 2-6; 18-19).

In his 1974 synthesis of the British Bronze Age Burgess dealt with earlier phases of the Bronze Age. In the Early Bronze Age he recognised a Copper Age with tanged knives and daggers, ornaments, Irish flat axes and halberds. This included Stages I and II. Stage III was characterised by thin-butted flat axes of bronze and the associated knives, daggers, razors and ornaments of the Migdale industry as well as later halberds. In Stage IV axes with hammered flanges and daggers with ribs and grooves appeared. This is the early Wessex Bush Barrow phase with Scottish Colleonard and Irish Ballyvalley. The Arreton industry, the first characteristic of southern and eastern England, represents Stage V with cast-flanged axes, Camerton-Snowhill ogival daggers, tanged and socketed spearheads. Highland industries are represented by Ebnal, Inch Island and Derryniggin (1974, 190-194). There is much emphasis on a hiatus in traditions of burial, technology and ritual (*ibid.*, 194-198). The early Middle Bronze Age is the Acton Park phase, represented by developed flanged axes and shield-pattern palstaves found mainly in north Wales. Early rapiers and looped spearheads are presumed to have been current but associated finds are rare, though isolated finds are common in the Thames valley and the Cambridge Fens (*ibid.*, 200-202). The second Middle Bronze Age phase is named after the Taunton hoard. It includes the ornaments and palstaves common in the large hoards which appeared in southern England, developed rapiers and looped spearheads. Innovations on a small scale were socketed axes, hammers, saws and sickles (*ibid.*, 203-204). The later sequence was as in 1968; Penard, Wilburton, Ewart/Park Carp's Tongue, Ha C (*ibid.*, 205-214) with Wilburton beginning the Late Bronze Age and Ha C settlers ushering in the Iron Age.

The most recent modifications divide the Acton Park phase into two parts and do the same to the MBA3 Penard phase, in both cases to accommodate lengthened chronology relative to the continental sequence. The Ha C LBA3 phase is named after Llyn Fawr (1976a, 72-75).

Many other studies have been published since 1960 but only the most important can be mentioned here. On the Early Bronze Age, the implements and ornaments of England, Scotland and Wales were discussed by Britton (1963) and the daggers, with associated material and the Wessex culture, by Gerloff (1975). Rowlands' 1970 thesis on the Middle Bronze Age metalwork of southern Britain was published in 1976. This provides a comprehensive study of the evidence but the establishment of formal chronology was not its main aim. Coombs' 1971 thesis on the Late Bronze Age metalwork of southern Britain is forthcoming as PBF XX/2 (Müller-Karpe 1975, 183) and details of hoards are summarised elsewhere (Coombs 1975a). The study of the Ha C phase in Britain was placed on a new footing by the publication of Cowen's paper on Hallstatt bronze swords (1967).

Outside lowland Britain, the Welsh Late Bronze Age has been reviewed by Savory (1958a; 1975; 1976a, 15-25; 44-47; 1976b, 250-251). The later Middle Bronze Age and the early part of the late Bronze Age in northern England has been discussed by Burgess (1968c). Coles had devoted three substantial articles to the Late, Middle and Early periods of Scottish Bronze Age metalwork (1959-60; 1963-64; 1968-69). Harbison's work on the earlier Irish Bronze Age has been summarised in an article (1973). Eogan has dealt with the Late Bronze Age (1964) and catalogued Irish swords (1965) as well as providing a recent synthesis (Herity and Eogan 1977, 114-121).

THE CHRONOLOGY OF THE BRITISH EARLY IRON AGE

A brief summary of the development of the concept of the Iron Age in Britain and of the relevant terminology has been provided by Cunliffe (1974, 1-9). Before the recent spate of books concerning the Iron Age all significant synthesis was based on the work of Hawkes.

The report on excavations at St. Catharine's Hill, Winchester, was the occasion for Hawkes' first essay on the British Early Iron Age (Hawkes, Myres and Stevens 1930, 140-168). This introduced the concept of small groups of Celtic people migrating from the continent to southern Britain during the middle of the first millennium B.C. at the inception of the British Iron Age. These immigrants could be recognised by the occurrence of pottery "of Hallstatt character" at Hengistbury Head and All Cannings Cross and "of definitely Hallstatt pottery" at Eastbourne. At Park Brow a sequence of occupation could be recognised: first, Late Bronze Age, Deverel-Rimbury; second, Early Iron Age, Hallstatt; third, Late Iron Age, La Tène. Other sites which produced large quantities of Hallstatt pottery were Scarborough, Fengate and Old England, Brentford. The bronze hoards from Birchington and Worthing were contained in pottery vessels of Hallstatt character. This Hallstatt pottery comprised coarse wares with finger-tip ornament and angular shoulders, different in form from Deverel-Rimbury coarse wares, fine bowls with haematite coating, jars with inlaid ornament at All Cannings Cross and painted ornament at Eastbourne. While finger-tipped coarse wares were common in Late Bronze Age Deverel-Rimbury assemblages, a distinction in burial rite, marked by the disappearance of the Deverel-Rimbury cremation tradition, set these Early Iron Age Hallstatt groups apart from their predecessors.

Hawkes wisely pointed out that the evidence was then insufficient to confirm the existence of the various well-defined invasions which scholars were then fond of elaborating. He accepted the view, then conventional, that Late Bronze Age immigrants from the west-Alpine Lake Villages arrived in Britain around the seventh century bringing distinctive bronzes and finger-tipped pottery. This was too early for the Hallstatt immigrant groups, which were sought on the lower Rhine. Under pressure from the early Germans, the Celtic people of the lower Rhine, who built barrows and used finger-tipped pottery, were forced to migrate around the sixth century. Many moved south to begin the Urnfields of southern France and Catalonia. Some may have gone directly to Britain, specifically to Scarborough. Others remained in Champagne, best represented at Les Jogasses, where the combinations of coarse and fine wares known at All Cannings Cross and Hengistbury were to be found. Cremation was abandoned for inhumation at Les Jogasses, which could be dated to the very end of the Hallstatt period.

Hallstatt immigrants were established in southern Britain (*ibid.*, fig. 18) and, "save for four pieces of Marnian pottery, which must be trade imports,

like the contemporary foreign brooches" (*ibid.*, 160), this was the end of continental influence until the Belgae.

In his famous 'Hill-forts' article (1931) Hawkes formalised his views a little, introduced the term 'Iron Age A' for the immigrant Hallstatt culture (*ibid.*, 64) and adapted his map from the St. Catharine's Hill report to show its distribution (*ibid.*, fig. 1).

A succinct summary, without ABC terminology, was included in the 1932 Congress Handbook; this largely reproduced the conclusions of the St. Catharine's Hill essay. The survival of Late Bronze Age bronze implements with Hallstatt pottery at Scarborough exemplified an inconsistency in terminology which has still not been exorcised. Any pottery after Deverel-Rimbury is referred to as 'Early Iron Age', even if found on sites with 'Late Bronze Age' metalwork. Iron Age coarse wares are distinguished from those of the Bronze Age by their high quality and the restriction from those of the Bronze Age by their high quality and the restriction of finger-tip ornament to the flat rims and angular shoulders of vessels whose form imitates that of 'Hallstatt bronze buckets'. It is explicitly stated that hillforts were introduced by early Iron Age immigrants (Handbook 1932, 42-45). In the volume on Archaeology in England and Wales, Hawkes used the ABC scheme, but relied on the same basic concepts as before. Distinctive metal finds of Iron Age A were rare; some Iron Age metal objects had been recognised by Arthur Evans (1907-09, 128, fig. 7). Others were Italic brooches of suspect origin. Iron objects were rare. Later Iron Age A types showed La Tène influence: La Tène brooches and ring-headed pins (Kendrick and Hawkes 1932, 153-174).

By 1940, when Childe surveyed the Early Iron Age, one important change had taken place. He devoted a whole chapter to 'La Tène invasions' (1940, 212-227). Intrusive early La Tène culture was identified in east Yorkshire and more general 'Marnian' influence in southern England. Thus, the pre-La Tène period, which concerns us here, was better defined. There was an important new pottery group, from West Harling, and swan's neck pins were identified as Hallstatt types (*ibid.*, 194-207; Dunning 1934).

Hawkes formally restated his ABC scheme in 1959; this was prefaced by a brief recapitulation of earlier work (1959, 170-172). A, B and C were defined as cultural groupings with intrinsic relative chronology but with absolute chronology drawn from external evidence. England and Wales were divided into geographic areas and the six centuries of the Iron Age were divided into three main periods, each with sub-divisions. Within the plane defined by these two axes, geographical and chronological, were placed the cultural divisions with regional and ordinal prefixes. Iron 1 was late Hallstatt and early La Tène I (*ibid.*, 172-176). Period 1 was First A. The earliest Hallstatt bronzes arrived during the seventh century. The native bronze industry continued in the highland zone but was displaced in the lowland zone during the sixth century by the Hallstatt bronzes and Armorican socketed axes which now supplied lowland Britain with its metal. About the time of the Ha C/D transition, Celtic colonists arrived; their pottery was mainly late Hallstatt with archaic features at Eastbourne and All Cannings Cross, Ha D metalwork was rare. The origins of these immigrants were in the Low Countries, in the case of Staple Howe, and in unspecified areas of northern and western France.

This First A culture of Phase 1a was established in the south: Hengistbury, All Cannings Cross, Eastbourne, Highdown, Deal, Colchester, Walthamstow and Fengate, and in the east: Grafton, Scarborough, Staple Howe and West Harling, but scarcely in the west. Phase 1b was represented by a few later sites, still First A, such as Long Wittenham, already with La Tène pottery, early La Tène brooches, Thames daggers and swan's neck pins. Second A was fully La Tène but no new immigrants arrived until the First B Marnians of the third century (*ibid.*, 176-179, figs. 2-4).

Two articles in 1976 treated again the beginnings of the Iron Age in southern England. Reassessing St. Catharine's Hill and the south coast area, Hawkes regards the earliest Sussex pottery as of later Hallstatt Belgian origin, without quoting comparative material. The Wiltshire area, All Cannings Cross with Hengistbury, now has its haematite bowls and inlaid jars derived from French Late Bronze Age tradition, though quite how is obscure (Hawkes 1976a, 64-68). In the Thames valley the very earliest daggers were derived from Belgium, cf. Luttre, but by the La Tène transition they were derived from Champagne. From this area the Eastbourne pottery was probably derived too, Jogassian. Other late Hallstatt influence is represented by the use of the omphalos base on pottery from Long Wittenham. Swan's-neck pins are still Hallstatt, ring-headed pins La Tène. The Thames valley has a final Hallstatt/early La Tène culture but Hawkes warns against identifying this La Tène culture, diluted and peripheral, as exclusively Celtic (1976b, 1-11). There is now no mention of ABC.

ABC was criticised by Hodson (1960) who pointed out that it relied on the continued acceptance of distinct Hallstatt, La Tène and Belgic influence and was bounded by geographical divisions which could well prove artificial. He also pointed out that the details of the ABC scheme as applied to individual sites and types had not been presented in any but summary form. Hodson reiterated his criticisms with particular reference to the Second B, La Tène 'Marnian' horizon, the validity of which he doubted (1962). In 1964 he produced a scheme based on local cultural assemblages including Hallstatt and La Tène influences where these could be identified. Outside such areas the Woodbury culture was recognised, characterised by round huts, bone weaving-combs and ring headed pins. The Early Pre-Roman Iron Age was divided into two parts by the appearance of the first La Tène material but the existence of a distinct Hallstatt culture with large-scale continental influence was denied.

The 1960s saw a revival of interest in the study of the Iron Age, both in the field and in the museum. The period which had hitherto defied detailed synthesis became the subject of several synthetic monographs and general works were published in 1974 by Cunliffe and by Harding. The first volume, born of a Cambridge thesis on the pottery of southern Britain, is more comprehensive. The second, by a pupil of Hawkes, deals in more detail with specific problems and interpretations. Harding repeated a good deal of material from the publication of his thesis on the Upper Thames Basin (1972).

Cunliffe defined various 'style-zones', based on the evidence of pottery, so only applicable to lowland Britain and north-western Scotland. Wales, northern England, southern and eastern Scotland were divided into zones characterised by the conventional regional divisions of Late Bronze Age metal-

work (1974, 49-56). In southern England an Ultimate Deverel-Rimbury culture was followed by the Early All Cannings Cross group during the eighth and seventh centuries. Sixth-century groups, whose origins were subsequently placed in the seventh century (1978, 34), were more extensive: Later All Cannings Cross in Wessex; Kimmeridge - Caburn - West Harling - Staple Howe round the coast from Portland Bill to north Yorkshire; Ivinghoe - Sandy in the south-east Midlands. Dating evidence was not argued in detail and appears to rest mainly on a few radiocarbon dates of varying value and on somewhat uncritical use of dates derived from Late Bronze Age metalwork. La Tène pottery forms were introduced 'towards the end of the fifth century' and a more detailed series of groups was defined (*ibid.*, 29-41). Beside this study of the pottery, was set an account of continental contact based on metalwork: Late Urnfield and Ha C material in the seventh and sixth centuries bringing iron (*ibid.*, 267-269); Armorican socketed axes during the same centuries; a little Ha D material during the sixth and fifth centuries (*ibid.*, 129-144).

Harding began his chronological section with a review of specifically Late Bronze Age pottery and the problem of terminology which renders much pottery 'Iron Age', although it is found on the same sites as Late Bronze Age metalwork (1974, 129-133). The pre-La Tène phase is called the primary Iron Age (*ibid.*, 134-156), defined largely by the appearance of material which can be equated with the continental Hallstatt cultures. This primary Iron Age appears to be Hawkes' First A thinly disguised. Distinctive pottery is discussed in detail with frequent recourse to derivation from bronze vessels, which will be discussed elsewhere (see p. 285). Hallstatt settlers are recognised, earlier and of westerly origin in Wessex, later and of easterly origin in south-east England (*ibid.*, 229).

The appearance of these two volumes has provided ample scope for criticism, constructive or otherwise. This has, so far, included only one new chronological scheme (Collis 1977, 6-7). The British Iron Age contemporary with La Tène is divided into early, middle and late, but treatment of the beginning of the Iron Age exemplifies the confusion which arises out of a compartmentalised treatment of conventional divisions. Collis calls the first phase 'the Earliest Iron Age (or Latest Bronze Age)', the transition from bronze to iron technology, broadly contemporary with the Hallstatt period and including Llyn Fawr, Staple Howe and early All Cannings Cross.

Conventional methods of studying metalwork, the insular sequence marked in places by datable imports, can establish the technological division between bronze and iron within reasonable limits. I have called the two relevant phases LBA4 and EIA1 and equated them roughly with Ha C and Ha D respectively (see p. 230-1). Metalwork typology can also establish the subsequent phase of the Early Iron Age represented by the first La Tène objects. The change from bronze to iron technology must have been significant in social terms (see p. 306-7); other transitions in conventional terminology need not represent any notable changes in prehistoric society but their recognition, often most conveniently done by reference to changes in continental sequences, is necessary to establish our own chronology which is only a means, not an end in itself. Accidents of change in our conventional chronology, essentially the back-dating of Deverel-Rimbury, have left a gap in the pottery sequence

contemporary with the Late Bronze Age. It has proved difficult to fill this gap with well-known pottery assemblages but recent finds should prove more amenable (see p.284-6). When this has been done, and new finds from northern France and the Low Countries taken fully into account, we may see whether the resulting sequence of pottery, with associated structures and settlements, reflects the same changes as the metalwork sequence. It may not do so. In any case new terminology should be required but I am content to use here my own terminology, essentially conventional, for the final phase of the Late Bronze Age, equivalent to Ha C, and to distinguish the first phase of the Iron Age in southern Britain as that which is recognisably pre-La Tène.

CHAPTER 2

RELATIVE CHRONOLOGY

RELATIVE CHRONOLOGY: MIDDLE BRONZE AGE

Central European chronology

Paul Reinecke divided the Bronzezeit of Bavaria into four phases, A-D, which still form the basis of the chronology of the Bronze Age in central Europe. The Bronzezeit was succeeded by the Hallstattzeit, also divided A-D. Reinecke's Bronze D is now included with Ha A and Ha B in the Urnfield period (Müller-Karpe 1959, 144-150, 182-186), though it may still be referred to as the späte Bronzezeit (Torbrügge 1959a, 12). Torbrügge refers to his Bronze A as the frühe Bronzezeit and his B and C as the mittlere Bronzezeit (*ibid.*, 5-14; Gerloff 1975, 1-2). Bronze A is usually divided into two parts: A1, often known as the Straubing phase, and A2, often known as the Lanquaid phase (Torbrügge 1959a, 5-10, Abb. 1; Gerloff 1975, 2; Müller-Karpe 1974, 12, Abb. 1). The existence of a phase transitional between Bronze A and Bronze B, 'Reinecke A3', has been suggested (Gerloff 1975, 4) but this phase has not yet been assimilated into the conventional terminology. It is the mittlere Bronzezeit, also known as the Hügelgräberzeit, the Tumulus period, which chiefly concerns us here. Reinecke divided this into three parts: B, C1 and C2, but Friedrich Holste modified this to B1, B2 and C with Bronze D contemporary with part of C (*ibid.*, 2; Torbrügge 1959a, Abb. 2, left). Torbrügge correlated these two schemes, showing that, in each scheme, the three parts of B and C were contemporary and D a separate phase (*ibid.*, 10-15) but the numbering of the B and C phase still causes confusion and such terms as B(B1) or C(C2) are still to be seen. The first phase, B or B1, is usually known after Lochham; the second, C1 or B2, after Göggenhofen and the third, C2 or C, after Asenkofen (Müller-Karpe 1974, Abb. 1; Schauer 1971, Abb. 1-2; Jockenhövel 1971, Abb. 3). The contents of these phases have been enumerated by Torbrügge (1959a, 31-44, 48-57, 60-70, 76-78).

The mittlere Bronzezeit in northern and western Switzerland has been dealt with recently by Osterwalder (1971), though without a detailed correlation with the Bavarian chronology. The Tumulus period in Hesse was the subject of Holste's Marburg thesis (1939); the most recent treatment is that of Kubach (1974, 31-37) with a tripartite division similar to that for Bavaria. More wide-ranging works, treating the Tumulus culture through western Germany, including Alsace, north to the Lüneburg Heath, are those of Holste (1953b) and Ziegert (1963).

Nordic Chronology

The chronology of the Bronze Age in northern Europe is based on the work of Oscar Montelius in Sweden and Sophus Müller in Denmark. There is a fine summary of earlier work by Jacob-Friesen (1967, 15-43). More recent works on the earlier part of the Bronze Age usually divide this area into several parts following Kersten (n.d. [1935], 2-3), who treated southern Sweden, the Danish

islands and northern Jutland as Zone I; southern Jutland, Schleswig-Holstein, the western side of the Elbe estuary and north-western Pomerania as Zone II, including Mecklenburg during MIII, and an area peripheral to the nordischen Kreis in Lower Saxony. Brandenburg and Pomerania as Zone III. Another important division was the Sögel Kreis, first defined by Sprockhoff (1927; 1941, 32-33; Hachmann 1957, 30), which included southern Jutland and Schleswig-Holstein and north-western Germany from the Elbe to the Main and the Ijssel (Kubach 1973b, 406; Butler 1963a, fig. 45, left). Beside the catalogues produced so efficiently by Nordic scholars (Broholm 1943; 1944; Aner and Kersten 1973; 1976; Oldeberg 1974), there are works of synthesis correlating the Nordic chronology with the central European; these concern us for the purposes of relative chronology.

The first of these is the seminal volume by Hachmann (1957). He distinguished two regional groups; the Sögel area and, in northern Jutland and the Danish islands, the Mosbaek group (1957, 45, Karte 3, 5-6, 8) with four chronological horizons of influence from central Europe (ibid., 151-161, Taf. 2-3). Horizon I included Anglo-Irish Early Bronze Age material and Únětice material of Reinecke A1. Horizon II included influence from eastern Hungary and Transylvania, particularly Apa swords, and flanged axes from the Swiss Early Bronze Age, Reinecke A2 and 'A3'; Sögel swords developed at this time. Horizon III included South German Lochham material of Reinecke B; Wohlde swords developed at this time. Horizon IV included south German material of C1/B2 date, such as Spatzenhäuser swords, as well as west European palstaves (Milošević 1960, 229-230). The Sögel area had two periods: the first, characterised by Sögel swords, from Reinecke A2 to C1/B2 and the second, characterised by Wohlde swords, from Reinecke C1/B2 (Hachmann 1957, 36-40, 159, Tabelle 2).

The second correlation is that of the Danish scholar Lomborg (1959). He begins with a convenient chronological table comparing the various divisions of the earlier Bronze Age in the Nordic area (ibid., Abb. 1). This shows one significant change from the chronology of Montelius and Kersten; Period I is extended to include the early part of Period II, Kersten's IIa, leaving Period II including only the later parts, Kersten's IIbc. This expanded Period I begins at the time of the transition from Reinecke A2 to B and continues into Reinecke C1/B2 when the contracted Period II begins; this lasts into Reinecke D (ibid., 133-137). This correlation is for the primary Nordic area of southern Scandinavia, Zone I. Turning to the Sögel area, Lomborg denied that Hachmann's division of the Sögel and Wohlde periods was well-defined (ibid., 137-139); this conclusion has been supported by most later writers (Jacob-Friesen 1967, 26, 38; Laux 1971, 100; Kubach 1973b, 407). According to Lomborg, the Sögel-Wohlde culture of Hachmann was contemporary with the expanded MI of southern Scandinavia and not later (ibid., 139-142). Lomborg returned to the chronology of the Nordic Early Bronze Age a decade later (1968). He emphasised that the Sögel-Wohlde culture extended into southern and western Jutland, leaving only the north and east to form the Nordic culture with the Danish islands and southern Sweden (ibid., 94-95, 140, fig. 1) and that the extent of Zone I into Jutland was less than by Kersten's definition (ibid., 94 n. 15). Only in MII does the Nordic area expand into southern Jutland and Holstein (ibid., 95 n. 23). Lomborg's early Period I

is called the Fardrup horizon and includes Bagterp spearheads and solid-hilted swords and daggers of Carpathian origin or influence (*ibid.*, 96-101, 140-141). Bagterp spearheads are defined after the classification of Becker (1967, 220-221); according to Jacob-Friesen the ornament on Bagterp spearheads was derived from Reinecke A2 models (1967, 75). The swords are the most important chronological indicators; they are related to swords of Hajdúszámson-Apa type placed by Mozsolics in her period IIIa, contemporary with Reinecke A2 (1967, 49-54, 121-123). Hänsel places these swords in his frühe danubische Bronzezeit III, contemporary with A2, though emphasising that the Apa hoard is transitional to mittlere danubische Bronzezeit I, Reinecke B/B1 (1968, 25-34). Bóna also prefers a later date, his Middle Bronze Age 3, Reinecke A3-B1 (1975, 273-276). Influence from the south-east may not have reached the Nordic area before the time of the Apa hoard (Lomborg 1968, 99). This agrees with the accepted correlation of the Sögel phase with the Lochham phase, Reinecke B/B1, over most of its extent, while allowing for a slightly earlier beginning (Jacob-Friesen 1967, 69-72; Schauer 1971, 26-29; Kubach 1973b, 404-407). Lomborg's late Period I is his Valsømagle horizon (1968, 101-108, 141-144). The swords of this phase are related to Carpathian Zajta swords of Mozsolics period IIIb (1967, 51-54, 123-126), Holste's Au type of Hänsel's mittlere danubische Bronzezeit II (1968, 29-31), broadly contemporary with the Lochham phase. Lomborg sees little evidence of influence from the south German Spatzenhäuser type on the Valsømagle swords (1968, 102 n. 60). There are two Danish finds of Lochham Lochhalsnadeln in this phase (*ibid.*, 107-108, fig. 2, 7-8), which also includes shaft-hole axes (*ibid.*, fig. 2, 3) and Valsømagle spearheads (*ibid.*, fig. 2, 5). North-west German palstaves with Y-ornament (*ibid.*, 108, fig. 2, 4) provide a link with late Sögel finds, such as the Ilsmoor hoard (92) with its shield-pattern palstaves. A further link with shield-pattern palstaves, the German form with indistinct stop-ridge, is provided by the Hausberge hoard (90) which contains a flanged axe with a long butt, a Valsømagle type (*ibid.*, 104, fig. 2, 6), and a Lochham dagger (*ibid.*, 108 n. 81, fig. 5, 2). The early Period II Løve horizon includes Smørumrovre spearheads and shows the spread of Nordic types into southern Jutland (*ibid.*, 109-119, 144-149, fig. 9). During later Period II imports of Reinecke C/C2 and D appear (*ibid.*, 118 n. 113, 149). This sequence is summarised in another work (Lomborg 1973, 147-148, fig. 87).

Two studies by Randsborg examine the transitions between MII/III and MIII/IV and the correlation of these phases with the central European chronology (1968; 1972), though his methodology has been criticised for its reliance on old records and for circular arguments (Jacob-Friesen 1975, 121-124; Stjernquist 1973). In southern, western and part of north-western Jutland and western Schleswig-Holstein, late MII forms are associated with Reinecke C imports at a time when the earliest MIII types make their appearance. In this area MIII forms are associated with Reinecke D imports and Ha A1 imports. In north and east Zealand, Bornholm and Scania many MII forms occur at the same time as early MIII forms in the west, during what Randsborg calls 'Sub-period II'. Reinecke D and Ha A1 exports are associated. In Mecklenburg many MIII types are associated with Reinecke D exports and there is no evidence for the theory that MIII began earlier in Mecklenburg than in Jutland (1968, 131-133). Neither does he find much evidence for the occurrence of

Reinecke D forms in MII (*ibid.*, 60-62) though most writers claim some overlap (Jacob-Friesen 1967, 78-80; von Brunn 1968, 125-126; Thrane 1975, 217). In 1972 Randsborg examined the chronology of MII and early MIV and provided a comprehensive chronological scheme (1972, fig. 17). It was generally accepted that Ha A1 was included in MIII and Ha B1 in MIV, but there was dispute about the position of Ha A2, from which little material was known in the north (*ibid.*, 10). For Baudou it was in late MIII (1960, 132-134), for von Brunn in early MIV (1968, 130-133) and for Thrane it was transitional (1975, 203). Randsborg concludes that MIV first developed in central southern Scandinavia, probably in northern Zealand, while in other areas MIII types persisted into Sub-period III; this phase was contemporary with Ha A2. MIV had developed everywhere in the Nordic area by Ha B1; late MIII was everywhere contemporary with Ha A1 (1968, 71-72). Thrane agrees that most imported material in MIV is of Ha B1 date and stresses that there is little Ha A2 material in the Nordic area (1975, 215-219, 260).

North-west German chronology

Through the work of Sprockhoff (1941), Smith (1959) and Butler (1963a) attention has been focussed on north-western Germany as the possible source of much material of the British Middle Bronze Age and as a guide to its chronology. In 1971 there appeared two works on the earlier Bronze Age in north-western Germany (Bergmann 1970; Laux 1971; Jacob-Friesen 1973, 569 n. 1). Bergmann's work was based on evidence collected before the Second World War and was subject to many vicissitudes (1970, Teil A, 9 n. 1). Much material is assembled for the purpose of "ethnic and historical interpretation" but illustrations of artefacts are somewhat schematic (*ibid.*, Teil B, Taf. 1-14), chronological discussion summary and, according to Jacob-Friesen (1973, 586), unreliable. The volume by Laux (1971) covers a more restricted area but he produces a detailed and well-documented chronology which is discussed in detail in the following section. The earlier Bronze Age in Westphalia has been discussed by Sudholz (1964).

Laux's chronology of the earlier Bronze Age in north-western Germany

The most recent systematic studies of the earlier part of the Bronze Age in north-western Germany have been by Laux. These are his Kiel thesis on the Lüneburg Heath region (1971) and PBF volumes on brooches (1973) and pins (1976). His first work establishes a new chronological system for the Lüneburg area, except its north-western margins where the Nordic chronology of Montelius still applies (1971, 104; 1976, 12); this new chronology is extended over most of Lower Saxony in his PBF volumes (1976, 8-12). Laux divides his material into a *Sögel-Wohld* phase, succeeded by various *Zeitgruppen* for male and female burials respectively. In 1971 these *Zeitgruppen* are of the *ältere und mittlere Bronzezeit* (1971, 103); in 1976 they are *hügelgraberzeitlichen* (1976, 8-12), succeeded by the *Urnenfelderzeit in Niedersachsen* (*ibid.*, 12-14). Laux appears to apply the south German Tumulus and Urnfield division to Lower Saxony, and there are precedents for this (Ziegert 1963, 21-25), though Jacob-Friesen prefers the conventional division of the Nordic Bronze Age into *ältere* and *jüngere* (1973, 570). In 1971 Laux has four *Zeitgruppen*, in 1976 only three. This is a complicated system

(*ibid.*, 577) and is not explicitly correlated with either Nordic or south German chronology. His ältere Bronzezeit, Zeitgruppen I and II, should relate to MII and his mittlere Bronzezeit, Zeitgruppen III and IV, to MIII (Busch 1972, 308). Jacob-Friesen considered that Zeitgruppe IV of male burials in the Ilmenau valley should be expressed as IIIb and Zeitgruppe III of female burials in the Südheide as IIc (1973, 579).

Correlation of Laux's chronologies of 1971 and 1976 (Table 2) allows clarification of his divisions and an attempt at establishing their relations with the Montelius and Reinecke chronologies. After the Sögel-Wohlde phase, ältere Hügelgräberzeit, comes Zeitgruppe I, mittlere Hügelgräberzeit; this is the Behringen-Bonstorf phase for female burials and the Westendorf phase for male burials. Here correlation is straightforward. Zeitgruppe II, jüngere Hügelgräberzeit, is the Wardböhmen-Kolkhagen phase for female burials and the Bonstorf phase for male burials. Sub-divisions made for the Lüneburg area are not distinguished on a larger scale. Zeitgruppe III, späte Hügelgräberzeit, is more complicated. For female burials a transitional phase in the Ilmenau valley is followed by the Deutsch-Evern phase; in the Nord- and Südheide the early part of Zeitgruppe III, the Fuhrhop phase, is followed by a later part, from which grave-goods are absent. It is presumably this Fuhrhop phase which Jacob-Friesen regards as Zeitgruppe IIc. For male burials the early part of Zeitgruppe III in the western Lüneburg Heath, the Bergen-Bleckmar phase, is followed by a phase without grave-goods; in the east an early, Oldendorf, phase is followed by a late, Tangendorf, phase which includes burials of 1971 Zeitgruppe IV, which appears to have become a Zeitgruppe IIIb as Jacob-Friesen suggested. The complex relations between the various Zeitgruppen outlined in 1971 (122-123) are not included in 1976. Two Urnfield phases, Zeitgruppen IV and V follow the Tumulus phases (1976, 12-14).

Detailed examination of Laux's material reveals sufficient evidence to correlate his phases with the Nordic and south German chronology.

For the Sögel-Wohlde phase wheel-headed pins with moulded ornament on both sides of the head, which has a central ring and six spokes (Laux 1976, 24-25), include one example of Lochham/Reinecke B origin (*ibid.*, no. 81; Kubach 1974, 32 n. 19, Taf. 8, 3).

Middle Rhine Lochhalsnadeln occur in the Westendorf phase of Zeitgruppe I (Laux 1976, 57); these belong to the B2/C1 Schwanheim phase in Hesse (Kubach 1974, 32) but have a wide range of date (Kubach 1977, 115).

Double-sided wheel-headed pins with an inner ring and either eight spokes or a cruciform pattern occur in the Wardböhmen-Kolkhagen phase of Zeitgruppe II (Laux 1976, 25-26); these pins occur in Hesse in the C/C2 Bessunger Wald phase (Kubach 1974, 34, 36, Taf. 16A). Further evidence is provided by a burial of this phase from Reckerode, Kr. Hersfeld-Rotenburg, barrow 4, which contains a Lüneburg wheel-headed pin, moulded only on one side, and a Lüneburg brooch (*ibid.*, 36-37, Taf. 16B; 1977, 244 no. 500). The pin is of a form most common in the Wardböhmen-Kolkhagen phase of Zeitgruppe II (Laux 1976, 33 n. 34) and the brooch belongs to the Bonstorf phase of the same Zeitgruppe (Betzler 1974, 151 n. 2).

Kubach correlates Zeitgruppe III with his Reinecke D Wolfersheim phase (1977, 246 n. 23), although this overlaps with the preceding Traisbach phase which is linked to the early part of Zeitgruppe III, the Fuhrhop phase (*ibid.*). In many cases wheel-headed pins of this Traisbach phase, partly Reinecke C2, occur in Lower Saxony in Fuhrhop contexts or in contemporary contexts (*ibid.*, 164 n. 2; 170 n. 23; 171 n. 32, 34-35, 37-38, 40-42, 45-47, 63, 65; 180 n. 4, 10, 12, 14-18; 181 n. 42). Pins of Zeitgruppe II also occur in Traisbach contexts (*ibid.*, 199 n. 10-16; 156 n. 9, 23-24; 164 n. 1). The overlap between Zeitgruppe II and Zeitgruppe III is thus not clearly definable in terms of central European chronology.

Laux is more explicit about the relationship between Zeitgruppe III and the Nordic chronology. He writes, Der Anfang der Periode III ist mit der Zeitstufe Fuhrhop gleichzusetzen, that the Wardböhmen-Kolkhagen phase is contemporary with developed MII and the end of this phase with the end of MII (1976, 37, 42). He places the later part of Zeitgruppe III, the Tangendorf phase, within MIII (*ibid.*, 77). A burial of this phase from Buendorf, Kr. Lüneburg, barrow 1, includes a MIII chape (1971, 212 no. 248A, Tabelle 10, Taf. 50, 2; Kersten n.d. (1935) 69, Form A4). A burial of the early Zeitgruppe III Oldendorf phase from Gollern, Kr. Uelzen, contains a flange-hilted sword of central European type (Laux 1971, 247 no. 478A, Tabelle 10, Taf. 45, 1; 1976, 83). Laux regards this as an Erbenheim sword but Schauer classified it, with the provenance 'Bevensen', as a Stätzling sword (1971, 145 n. 5). Stätzling swords occur at the MII/MIII transition and in the Ha A1 Kisápati phase (*ibid.*, 146). Lack of evidence appears to preclude detailed correlation of Zeitgruppe III with south German early Urnfield cultures (Laux 1976, 12), but the correlation set out in Table 1 does not conflict with other equations of the Nordic and Central European chronologies, for there is evidence of the continued appearance of MIII types alongside MIV (Randsborg 1972, 19, 62, 70-71) allowing Zeitgruppe IIIb to be later than Ha A1, thus contemporary with early MIV.

Table 1

Central Europe	N. W. Germany	Nordic Area
B1/B	Sögel-Wohlde	Sögel-Wohlde
B2/C1	<u>Zeitgruppe I</u>	MII
C/C2	<u>Zeitgruppe II</u>	MII
D-Ha A1	<u>Zeitgruppe IIIa</u>	MIII
	<u>Zeitgruppe IIIb</u>	MIII

Table 2 Zeitgruppe I

Behringen-Bonstorf phase. Female burials			
1976, 8, 28 no. 97	Behringen, Kr. Soltau, barrow 3	1971	225 no. 330C
1976, 8, 34 no. 154	Bonstorf, Kr. Celle	1971	171 no. 23
1971, Tabelle 11, <u>Zeitgruppe I</u>			
Westendorf phase. Male burials			
1976, 10, 57 no. 291	Beckedorf, Kr. Celle, barrow B	1971	166 no. 14E
1976, 10, 58 no. 300	Hohne, Kr. Celle, barrow 8	1971	176 no. 14H
1976, 10, 59 no. 309	Westendorf, Kr. Fallingbostel, barrow 3, burial I	1971	185 no. 68C
1971, Tabelle 9, <u>Zeitgruppe I</u>			
<u>Zeitgruppe II</u>			
Wardböhmen-Kolkhagen phase. Female burials			
1976, 8-9, 32 no. 141	Wardböhmen, Kr. Celle, barrow 1, burial II	1971	181 no. 58A
1976, 8-9, 30 no. 118	Heidenau, Kr. Harburg, barrow 7	1971	198 no. 148G
1976, 8-9, 43 no. 210	Kolkhagen, Kr. Lüneburg, barrow 7, burial II	1971	217 no. 277G
1976, 8-9, 44 no. 214	Wardböhmen, Kr. Celle, barrow 5, burial V	1971	179 no. 57E
1971, Tabelle 11, nos. 58A, 57E, <u>Zeitgruppe IIa</u>			
1971, Tabelle 12, no. 148G, <u>Zeitgruppe II</u>			
Bonstorf phase. Male burials			
1976, 10-11, 62 no. 327	Bonstorf, Kr. Celle, barrow 8, burial I	1971	171 no. 22C
1976, 10-11, 62 no. 325	Hagen, Kr. Celle, Häger Döpe barrow, burial I	1971	175 no. 39
1976, 10-11, 67 no. 358	Bonstorf, Kr. Celle, barrow 7	1971	171 no. 22B
1971, Tabelle 9, <u>Zeitgruppe II</u>			

(contd.)

Table 2 (contd.)

Zeitgruppe III

Deutsch-Evern phase. Female burials

1976, 9 n. 33	Deutsch-Evern, Kr. Lüneburg	1971	213 no. 251B
1976, 9 n. 32	Hohenbinstorf, Kr. Uelzen, barrow A	1971	252 no. 505A
1976, 40 no. 195	Wellendorf, Kr. Uelzen, barrow 2	1971	265 no. 586B
1971, Tabelle 13, no. 251B, <u>Zeitgruppe III</u>			
1971, Tabelle 14, nos. 505A, 586B, Transitional II/III			

Fuhrhop phase. Female burials

1976, 9 n. 35	Fehrhop, Kr. Fallingb. ostel	1971	187 no. 77
1976, 9 n. 34	Bleckmar, Kr. Celle, Kahlberg, barrow 3, burial I	1971	168 no. 19A
1971, Tabelle 11, <u>Zeitgruppe III</u>			

Bergen-Bleckmar phase. Male burials

1976, 11, 71 no. 382	Bergen, Kr. Celle	1971	167 no. 18A
1976, 11, 63 no. 340	Wardböhmen, Kr. Celle, barrow 5, burial II	1971	182 no. 58E
1976, 11, 65 no. 349	Ehlbeck, Kr. Lüneburg	1971	214 no. 254
1971, Tabelle 9, <u>Zeitgruppe III</u>			

Oldendorf phase. Male burials

1976, 11, 75 no. 411	Oldendorf, Kr. Lüneburg	1971	221 no. 294A
1976, 11 n. 45	Holthusen II, Kr. Uelzen, barrow A	1971	253 no. 510A
1971, Tabelle 9 no. 294A, <u>Zeitgruppe III</u>			
1971, Tabelle 10 no. 510A, <u>Zeitgruppe III</u>			

Tangendorf phase. Male burials

1976, 11, 77 no. 422	Tangendorf, Kr. Harburg	1971	205 no. 208A
1976, 11, 74 no. 402	Marxen, Kr. Harburg	1971	200 no. 163

(contd.)

Table 2 (contd.)

1976, 11 n. 46	Eddelstorf, Kr. Uelzen	1971	245 no. 465A-B
1976, 11, 78 no. 429	Holthusen II, Kr. Uelzen	1971	253 no. 510D
1971, Tabelle 9, nos. 208A, 163, Zeitgruppe IV			
1971, Tabelle 10, nos. 465A-B, 510D, <u>Zeitgruppe IV</u>			

Dutch and Belgian chronology

The Middle Bronze Age in the Netherlands is conventionally defined as the period of the Drakenstein phase in the south and the Elp culture in the north, following the Hilversum and Sogel phases of the Early Bronze Age (Periodisiering 1965-66, 9; Butler 1969, 43-74). Northern Belgium shares the south Dutch chronology; the Middle Bronze Age in Belgium is broadly contemporary with the central European Tumulus culture (de Laet 1974, 282-348).

French chronology

The conventional chronology of the French Bronze Age is that of Hatt (Guilaine 1976b, 19-20). It is Bronze Moyen which concerns us here, as classified on the basis of material from the Haguenau Forest (Hatt 1955). He distinguished three phases related successively to the Lochham phase, to Reinecke C and to the initial phase of the Urnfield period, though Ziegert placed all the material of this last phase within Reinecke C (1963, 13-15, Taf. 6). In eastern France Bronze Moyen begins during the Lochham phase and ends with the appearance of the first Urnfield material of Reinecke D (Zumstein 1966, 32-36; 1976, 638; Abels 1972, 44). This equation of Bronze Moyen with the Tumulus period is generally accepted in northern France (Gaucher and Mohen 1974, 33-44; Gaucher 1976, 577; Verron 1976a, 587-590), but only for Brittany has a detailed treatment of chronology been published (Briard 1965, 79-150, 297-299). Three phases were originally distinguished there: Bronze Moyen I, the secondary series of barrow burials, Bronze Moyen II, the Tréboul phase, Bronze Moyen III the phase of trapezoidal-hilted rapiers and large palstave hoards.

More recently, Briard has been cautious about the chronological position of the secondary series barrows (1976a, 567) which may not occupy the distinct chronological phase originally allotted to them by Giot (1960, 142; cf. Butler and Waterbolk 1974, 159-160). The possibility of a late date for the richer primary series of barrows is raised by the appearance of a wheel-headed pin in the burial from Kernonen en Plouvorn, Finistère (Briard 1970a, 28, figs. 9, 12; 1975, fig. 5, 5; Butler and Waterbolk 1974, 141, 151; Gerloff 1975, 97). This pin appears to belong to Kubach's Speyer type of early Tumulus date (1971, 34 n. 5). Schauer has equated Tréboul swords with the Lochham phase and the Sogel-Wohlde period; trapezoidal hilted rapiers are equated with Reinecke C (1972c, Tabelle 1). This leaves little space for an independent secondary series of barrows. The end of Bronze Moyen in Brittany can be equated with the beginning of Reinecke D (*ibid.*).

Table 3 outlines the relative chronology derived from the preceding correlations. The horizontal lines represent the stages at which correlations may be made with greatest confidence.

Table 3

<u>Brittany</u>	<u>E. France</u>	<u>S. Germany</u>	<u>S. Scandinavia</u>	<u>N. W. Germany</u>
			Zone II	Zone I
Primary series	<u>Bronze Ancien III</u>	A2	(IB) Sögel Fardrup (IB)	
			- MI	
Tréboul	<u>Bronze Moyen I</u>	B/B1	(IIA) Wohlde Valsømagle (IIa)	Sögel-Wohlde
	<u>Bronze Moyen II</u>	C1/B2		<u>Zeitgruppe I</u>
			MII	
Breton palstaves	<u>Bronze Moyen III</u>	C2/C	(IIB)	<u>Zeitgruppe II</u>
Rosnoën	<u>Bronze Final I</u>	D	Sub II/III	
	<u>Bronze Final IIa</u>	Ha A1	MIII	<u>Zeitgruppe IIIa</u>
		Ha A2	Sub III/IV	? <u>Zeitgruppe IIIb</u>
	<u>Bronze Final IIb</u>	Ha B1	MIV	

RELATIVE CHRONOLOGY: LATE BRONZE AGE

Central European chronology

The later Bronze Age of central Europe is characterised by its predominant burial rite as the period of the Urnfield culture. This rite usually consisted of the interment of cremated remains within, or alongside, ceramic urns in flat graves grouped into cemeteries. It is the chronology of this period, known in German terminology as the Urnenfelderzeit, succeeding the Bronzezeit and preceding the Hallstattzeit, which concerns us here.

Reinecke elucidated the chronology of southern Bavaria following his Bronzezeit with the Hallstattzeit divided into four phases, A-D. The first two of these phases, Ha A and Ha B, together with Reinecke's Bronze D, are conventionally united to comprise the Urnfield period. The re-examination of Reinecke's chronology and comparison with contemporary chronology in Italy and beyond by Hermann Müller-Karpe (1959) is the fundamental modern study.

A succinct English summary of the methods and results of Müller-Karpe's work has been given by Cowen (1961). After a review of Reinecke's divisions (1959, 4-6) and of later work, especially by his teacher, Gero von Merhart (*ibid.*, 8-11), Müller-Karpe proceeds to define six divisions of the Urnfield period north of the Alps: Reinecke D, Ha A1, Ha A2, Ha B1, Ha B2 and Ha B3. The east-Alpine area, north Tyrol, south Bavaria and south-western Germany are examined in turn and absolute chronology established by reference to south-western Venetia, Emilia, Umbria, southern Etruria, the Alban Hills of Rome, Cumae, western Apulia and south-eastern Sicily and on to the Aegean and Egypt. Correlation of these divisions allows Müller-Karpe to assign each of his north-Alpine divisions to a century, thirteenth to eighth B.C. (*ibid.*, 182-228, Abb. 64). The merits of the absolute chronology will be considered below (see pp.

Müller-Karpe's relative chronology is the basic conventional division for most of central Europe and, by extension or correlation, for the west and the north. It is not adhered to rigidly in Switzerland (Primas 1971 and subsequent contributions to this volume of the prehistoric archaeology of Switzerland) but the Swiss chronology cannot be radically different from that of adjacent areas. We may hope for an independent relative chronology from Hungary but the relevant phases, V and VI, of Mozsolics (1957, 119-120, 156) have not yet been treated in the detail of their predecessors and direct links between Western Europe and Hungary are very rare.

Müller-Karpe recognises Reinecke D as the first phase of the Urnfield culture in southern Germany, closer to Ha A than to Reinecke C (1959, 141-150, 170-176, 183-186). During Ha A flat graves replaced the barrows still usual during Reinecke D in Bavaria (*ibid.*, 151-152); a bipartite division of the period can be observed in cemeteries (*ibid.*, 153-156) and in hoards (*ibid.*,

156). One of the original features of Müller-Karpe's work was the tripartite division of Ha B. Evidence for this was drawn from cemeteries, particularly Maria Rast (Ruše), on the R. Drava in Slovenia, near the Austrian border, and Kelheim-Altmühlfeld, at the confluence of the Altmühl and the Danube in lower Bavaria (*ibid.*, 115-126; 161-164). Ha B hoards in the eastern Alps also reflect this division (*ibid.*, 127-131), Bavarian hoards too, though few are Ha B2 (*ibid.*, 166-168). There is little Ha B2 material in south-western Germany; most hoards belong to Ha B1 or Ha B3, and Ha B2 is here established on the typology of swords, knives and pins (*ibid.*, 176-181). In his subsequent study of Urnfield solid-hilted swords (1961), Müller-Karpe reiterated the chronology which he had published earlier.

This system has been extended to the Carpathian Basin (von Brunn 1968, 56-114) and Transylvania (Rusu 1963; Vulpe 1970, 5); Jockenhövel (1974c) has recently correlated the various divisions of the Urnfield culture in Czechoslovakia with more critical reference to Müller-Karpe's scheme. Von Brunn has divided central German hoards according to the south German chronology (168, 114-124). To the west, Hatt (1961) established his French chronology on the basis of Müller-Karpe. Most recently, Müller-Karpe has retained his six-fold division of the Bavarian Urnfield culture but for central Europe in general he has five divisions: frühe, ältere, mittlere, jüngere and späte, the first and last overlapping with late Tumulus and early Hallstatt phases (1974, Abb. 1).

Whatever the reaction of scholars of Italian archaeology to Müller-Karpe (Pallottino 1960), his division of the south German material remains fundamental and its correlation with areas to the west and north must be examined further. In Hesse Reinecke D and Ha A can be separated better by typology of pottery than of bronzes (Eggert 1976, 61-69) and the first flat Urnfields may not appear until Ha A (*ibid.*, 69-77; Kubach 1977, 28). The bipartite division of Ha A is generally accepted, though Eggert claims it is more distinct in the metal evidence than in the ceramic (1976, 77-87).

The only serious deviation from Müller-Karpe's scheme in the contemporary chronology concerns the existence of Ha B2, which is usually denied or ignored. Müller-Karpe himself has admitted that the distinction between Ha B1 and Ha B2 is often obscure (1966, 97). The evidence for Ha B2 at Kelheim is slight (Müller-Karpe 1959, Abb. 19). There are forty dated burials of which only thirty-three belong to Ha B. Eight burials distinguished by two, three or four types are placed in Ha B2; two of these burials have as many Ha B1 types as Ha B2, one as many Ha B3 types and one has more Ha B3 types. Only four burials contain material exclusively Ha B2 and, in each case, there are only two types. Specific attacks on the tripartite division of cemeteries have been made by Ruoff (1974, Anhang II) and Eggert (1976, 93-106). Even the existence of Ha B2 as a typological division in the rich sword material of Bavaria has been disputed (Torbrügge 1965, 92, Abb. 11-12). Neither Schauer (1971, 15, Abb. 1-2) nor Jockenhövel (1971, 22-23; 1974c, 57) recognises Ha B2 as a phase of more than local importance. Jacob-Friesen (1967, 67-68) also points out its inadequacy. Its existence is not recognised in Switzerland (Ruoff 1974, 72-74), south-western Germany (Dehn 1972, 52-54), Franconia (Henning 1970, 38, 56), or Hesse (Hermann 1966, 35, 43 n. 126; Eggert 1976, 120-127;

Kubach 1974, 37-43; 1977, 35). Even Kolling, who divides his Ha B material from the Saar into three phases, admits the difficulty of this division (1968, 95-96; cf. Kubach 1977, 516-517). Cowen's doubts about the validity of Müller-Karpe's divisions for solid-hilted swords which show a great increase in numbers in Ha B3 (1962, 78) may be answered by comparing the decline in popularity of flange-hilted swords in southern Germany, Austria and Switzerland (Schauer 1971) in Table 4.

Table 4

Solid-hilted		Flange-hilted	-
89	Ha A1	(mainly rod-tanged)	
72	Ha A2	50	
37	Ha B1	29	
30	Ha B2		
194	Ha B3	8	

Nordic chronology

The chronology of the later Bronze Age in northern Europe is currently based on the works of Baudou (1960), for the Nordic area, and of Sprockhoff (1937; 1956) and Tackenberg (1971), for northern Germany. According to Baudou (1960, 131) periods IV, V and VI follow each other without any significant overlap; a contrast with the chronology of the earlier Bronze Age. The sequence in northern Germany is less exact (Tackenberg 1971, 229-230; Laux 1976, 12-13). Tackenberg would lower the German chronology in relation to the Nordic (1971, 230-231) but this is not accepted by Thrane (1975, 220-221).

Several scholars have attempted to correlate the chronologies of northern and central Europe. Baudou equated Nordic divisions more or less exactly with central European (1960, 132-138). MIII lasted to the end of Ha A2; MIV covered Ha B1 and Ha B2; MV covered Ha B3; MVI began at the same time at Ha C. Jacob-Friesen agreed with this scheme, while emphasising the possibility of a start for MIV before the end of Ha A (1967, 81-84). Von Brunn placed the beginning of MIV alongside the beginning of Ha A2; MII lasted into Reinecke D; MIII covered the later part of Reinecke D and Ha A1; MIV covered Ha A2 and Ha B1 (1968, 124-138). The most recent review is by Thrane who does not adopt such a rigid correlation. He emphasises that there is much Ha B1 material in MIV (1975, 218) and much Ha B3 material in MV (*ibid.*, 220) while there is little from Ha A2 or Ha B2 in the north. MIV includes some Ha A and some Ha B2 material. This study, combined with that of Randsborg (1972, 71-77), who equates Ha A1 with MIII everywhere in the Nordic area and begins MIV during Ha A2 only in Zealand, gives the following result. The overlap between MII and MIII may be placed in Reinecke D; the overlap between MIII and MIV in Ha A2; the overlap between MIV and MV in Ha B2; MV does not extend into Ha C which is contemporary with the earlier part of MVI.

Dutch and Belgian chronology

The Late Bronze Age in the Low Countries is usually defined as the period contemporary with the Urnfield period of central Europe (Periodisering 1965-66, 9; Butler 1969, 75-86; de Laet 1974, 349-391). There is not yet any independent chronological system and groups of material are usually dated by reference to the chronology of their congeners in adjacent parts of Europe, northern, central or western.

French chronology

The chronology of the Late Bronze Age in France, Bronze Final, is based on Hatt's review of Müller-Karpe (1961). There are three main divisions. Bronze Final I is equated with Reinecke D; Bronze Final IIa with Ha A1 and IIb with Ha A2 (*ibid.*, fig. 3; cf. Müller-Karpe 1959, Abb. 35-39); Bronze Final IIIa with Ha B1 (Hatt 1961, fig. 4; cf. Müller-Karpe 1959, Abb. 40-42); IIIb with Ha B2 and Ha B3. The correlation has been reviewed for Alsace by Zumstein (1966, 36-63) who includes both Ha A2 and Ha B1 in Bronze Final IIb.

It is the chronology of the bronzes of northern France which concerns us here, so we must pass on to Briard's study of the Bronze industry of Brittany (1965). He recognises three phases during Bronze Final: Bronze Final I, the Rosnoën group; Bronze Final II, the Saint-Brieuc-des-Iffs group; Bronze Final III, the Carp's Tongue sword group (*ibid.*, 151-239). This division is followed for Normandy (Verron 1976a, 590-596) and for Picardy (Gaucher and Mohen 1974, 45-70; Blanchet 1976a, 34-38). In these areas it is based almost exclusively on the sequence of bronzes, whereas pottery plays a greater part in the southern area of the Paris Basin (Gaucher 1976, 577-583).

Correlation of Bronze Final I with Reinecke D is certain (Briard 1965, 170-173; Kubach 1973a, 303; Blanchet and Mohen 1977, 477-481). An important group of hoards, such as that from Malassis, Cher, contain Bronze Moyen material with a little Bronze Final I (Briard, Cordier and Gaucher 1969, 63-67) indicating that Bronze Final I followed on the end of Bronze Moyen without a hiatus. The Carp's Tongue and Plainseau material of Bronze Final III can be equated with Ha B3 (Jockenhövel 1972). In between these two horizons correlation is more difficult. Cannes-Ecluse hoard I, Seine-et-Marne, contains material predominantly of Bronze Final I but fragments of Ha A2 knives indicate a Bronze Final II date (Eluère 1974, 560-561; Gaucher 1976, 581). There is very little evidence to support correlation of the Saint-Brieuc group with central Europe (Briard 1965, 197). Briard cites two fragments of decorated bracelets in the hoard from Kerguerou en Rédené, Finistère, as evidence for links with Bronze Final II in southern France (*ibid.*, 183, fig. 61, 9-10). The first he compares to fragments in the hoards from Clans and Nice, Alpes-Maritime, but both of these hoards belong to Bronze Final I/Reinecke D (Lagrand 1976, 455, fig. 2; Schauer 1975a, 49, Abb. 2, Taf. 22). The second resembles bracelets in the Bronze Final II/Ha B1 hoard from La Farigourière, Pourrières, Var (Lagrand 1976, 455; Schauer 1975a, 55, Abb. 10A, 11-14). The main guide to the chronology of the Bronze Final II industry in northern France is the typology of its swords which should be derived from central European flange-hilted swords of later Ha A (Briard 1965, 197). Bronze Final II should be broadly contemporary with the earlier part of Ha B,

but its upper and lower boundaries, in relation to central European chronology, have yet to be defined with precision.

Table 5 outlines the relative chronology derived from the preceding correlations. The horizontal lines represent the stages at which correlations may be made with greatest confidence; the diagonal lines represent stages at which correlations are obscure.

Table 5

<u>N. France</u>	<u>E. France</u>	<u>S. Germany</u>	<u>N. Europe</u>
<u>Bronze Final I</u>	<u>Bronze Final I</u>	Reinecke D	Sub II/III
	IIa	Ha A1	MIII
	IIb	Ha A2	Sub III/IV
<u>Bronze Final II</u>	IIb	Ha B1	MIV
/	IIIa	(Ha B2)	/
<u>Bronze Final III</u>	IIIb	Ha B3	MV

RELATIVE CHRONOLOGY: EARLY IRON AGE

Central European chronology

The chronology of the pre-Roman Iron Age in central Europe is conveniently divided into two phases named after two famous sites, Hallstatt and La Tène. It is the first part of the Iron Age, the Hallstatt period, which concerns us here.

Within the Hallstatt period there are two major divisions, earlier and later (Müller-Karpe 1974, Abb. 1), known in Reinecke's terminology as Ha C and Ha D. Like the divisions relating to earlier periods in this system, these divisions were originally defined with material from southern Bavaria; most recent comprehensive study of the Hallstatt period in this area is that by Kossack (1959). The Bavarian chronology has been related to the Mediterranean chronology by Dehn and Frey (1962) and Peroni (1973, 48-78, fig. 2).

Ha C is usually sub-divided into two phases: Ha C1 and Ha C2 (Kossack 1959, 23, 31-32, Taf. 15-16). The sub-division of Ha D is more complex. Zürn defined two phases (1942), then added a third which he considered broadly contemporary with the beginning of the La Tène period (1952). Thus, three phases: Ha D1, Ha D2 and Ha D3 are usually accepted (Pauli 1972, 66-69). Their definition is largely based on the sequence of brooches (Mansfeld 1973, 64-91; Schaff 1971, 74-98). While Zürn still stresses the extent of overlap between late Hallstatt and early La Tène (1970, 107-110), other scholars see Ha D3 as a distinct phase in south-western Germany (Haffner 1976, 89-90; Schaaff 1971, 92 n. 109), though there is little evidence for its existence in the Rhine-Main area (Polenz 1973, 144, 149-179). Spindler has pointed out some possible pitfalls in Zürn's chronology of Ha D (1975, 223, 239).

The south German chronology has been applied to Swiss material, particularly by Drack in a series of articles on the Hallstatt period in northern and western Switzerland (1977, 103 n.). The material from Hallstatt itself has recently been shown not to be amenable to a detailed internal chronology (see p. 35-7).

Considerable attention has been devoted to the study of the Iron Age in the Hunsrück-Eifel area where the Laufeld group of Ha C was succeeded by the Hunsrück-Eifel culture (HEK) (Haffner 1976, 2). In the Neuweid basin the Laufeld group flourished during Ha C and lasted to the early part of Ha D when the first group of the Hunsrück-Eifel culture, HEK I, appeared (Joachim 1968). To the west, in the Moselle/Saar area, HEK I began earlier than in the Neuweid basin at the beginning of Ha D and its last phase, HEK ILB, was contemporary with Ha D3 (Haffner 1976, 87-93, Abb. 16).

Nordic chronology

MVI is the last phase of the Bronze Age in northern Europe and is succeeded by period I of the Iron Age (Baudou 1960, 128-131). MVI is usually equated with Ha C and part of Ha D (*ibid.*, 137; Thrane 1975, 260), though no recent study of this correlation is available (see pp. for the correlation of the MV/VI transition). In Lower Saxony, Laux correlates his Wessenstedt phase, which follows MV (1976, Taf. 63), with Ha C and Ha D (*ibid.*, 14).

A recent summary of the chronology of the Early Iron Age in northern Germany has been provided by Jacob-Friesen (1974, 396-398, Abb. 324). The transition from the last phase of the Bronze Age, MVI/Wessenstedt, to the first phase of the Iron Age, Jastorf, is placed in Ha D. Jastorf a is conventionally equated with Ha D and Jastorf b with La Tène A (Kruger 1961, 11) but the complexity of this chronology is demonstrated by Harck (1972, 31, Tab. A). His *vorrömische Eisenzeit* Ia includes Ha D material, but there is little evidence for the correlation of later periods in north-eastern Lower Saxony (*ibid.*, 28, 36-37). Other systems are those of Hingst (1959, 47-50, 112-122) for Holstein and Becker (1961) for central and southern Jutland.

Dutch and Belgian chronology

The beginning of the Iron Age in Belgium and the southern Netherlands can be equated with Ha C and in the northern Netherlands with the appearance of Harpstedt pottery (Periodisering 1965-66, 10; Butler 1969, 86; de Laet 1974, 392-437). Finer internal divisions, still provisional in the south, are based largely on the pottery sequence (Waterbolk 1962, 28-42; Verwers 1972, 123).

French chronology

The Premier Age du Fer in France is conveniently divided into three phases: Hallstatt ancien, moyen and final (Hatt 1962; Guilaine 1976b, 20-21). Hallstatt Final is divided into three phases (Hatt 1962, 666) related to the material from the Vix burial and the Mont-Lassois oppidum (Joffroy 1960). Hallstatt Final I immediately predates these sites, II represents their floruit, III is local survival contemporary with early La Tène. Wamser has recently studied the Early Iron Age material in Burgundy and the French Jura (1975). She detects two Ha C phases with strong late Urnfield influence and two Ha D phases. There is more evidence of contact with the central European area in the second Ha D phase which includes Ha D3 material in Burgundy. There is a mixed late Hallstatt/early La Tène phase in the Jura (*ibid.*, 90-99).

Evidence from the earlier part of the Hallstatt period in eastern France is not extensive but there is more from the later part (Sangmeister 1969). Hallstatt material is also scarce in northern France (Duval and Buchenschutz 1976, 790-791; Verron 1976b, 802-806) as it is in Champagne before Hallstatt Final (Thenot 1976, 826-827) which is best represented at Les Jogasses, Marne (Babes 1974; Hatt and Roualet 1976). The chronology of Champagne has recently been outlined by Hatt and Roualet (1977) who distinguish two late Hallstatt phases at Les Jogasses (*ibid.*, 10-11, pl. I-II); these precede the La Tène phases and are contemporary with the floruit of Vix and Mont-Lassois.

Table 6

<u>E. France</u>	<u>HEK</u>	<u>S. Germany</u>	<u>N. W. Germany</u>	<u>Nordic Area</u>
<u>Hallstatt Ancien</u>	Laufeld	Ha C1		
<u>Hallstatt Moyen</u>		Ha C2		
	HEK IA	Ha D1	Wessenstedt	MVI
<u>Hallstatt Final I</u>		Ha D2		
<u>Hallstatt Final II</u>	HEK IB	Ha D3	Jastorf	Early Iron Age
<u>La Tène Ancienne</u>	HEK IIA	La Tène A		

Table 6 outlines the relative chronology derived from the preceding correlations. The horizontal lines represent the stages at which correlations may be made with greatest confidence; the diagonal lines represent stages at which correlations are obscure.

The Hallstatt cemetery

The cemetery eponymous for the first part of the European Iron Age lies in the Salzbergthal, c. 450 m above the small town of Hallstatt, which is situated on the west bank of the lake of the same name, in the Salzkammergut, Upper Austria.

A few finds were made before the nineteenth century and unsystematic excavations took place between 1824 and 1831. Systematic excavation of some 980 graves between 1860 and 1863 recovered most of the material which is now preserved. An inspector of the adjacent salt mines, Johann Georg Ramsauer, was responsible, assisted by an artist, Isidor Engel. Various excavations took place subsequently until 1939. The finds were originally intended for the regional museum in Linz but most passed to the Naturhistorisches Staatmuseum in Vienna, while some remained in the museum at Hallstatt and others went to the Oberösterreichischen Landesmuseum in Linz. Other finds were dispersed more widely. As an impecunious imperial official with twenty-four children, Ramsauer sought the patronage of various members of the Habsburg and related aristocracy. Many took an interest in proceedings; on 19th September 1855 Graves 340 and 341 were opened in the presence of the Emperor Franz Joseph I and a large suite. Such visitors were often given excavated items. In 1907 the Archduchess Maria of Mecklenburg had twenty-six graves excavated; their contents eventually made their way to New York. The site was also patronised by the English aristocracy; Sir John Lubbock, the first Lord Avebury, and Sir John Evans both acquired material which is now in the British Museum and the Ashmolean Museum.

Ramsauer recorded his excavations very carefully. His basic document was an excavation diary which was supplemented by Engel's water-colour illustrations of the burials *in situ* and of the finds after excavation. Each grave was numbered and each object had a separate inventory number.

Various copies, more or less abbreviated, were made of the diary and annual reports were sent to the Akademie der Wissenschaften in Vienna. Between 1888 and 1895 the finds in Vienna were catalogued by Moritz Hoernes, presumably with reference to the original documentation. The site was by now famous but a complete publication of the material in the three Austrian museums had to await 1959 when Karl Kromer's weighty monograph appeared. Museum records were unreliable and Kromer based most of his grave-groups on Engel's illustrations and four copies of the excavation diary. The first, in Ramsauer's own hand, was recognised in Vienna in 1932, the other are in Vienna, Linz and Saint-Germain-en-Laye (Kromer 1959; Filip 1966, 456-458).

Kromer's publication of the grave-groups provided a basis for further study of the cemetery of Hallstatt in terms of relative chronology and social implications. Peroni (1973) has recently produced a most detailed chronology of the types present at Hallstatt based on Kromer's grave-groups.

In 1972 the Institut für Vor- und Frühgeschichte of Munich University received an illustrated account of the excavation of five graves, nos. 872, 909, 910, 911 and 912 in 1861. This appears to be a copy, by Engel, of Ramsauer's diary, accompanied by Engel's own illustrations. It is considerably more detailed than any other surviving account.

This provided Ludwig Pauli (1975) with an opportunity to review the evidence for the reliability of Kromer's grave-groups. For the relevant graves he compared the new account with Ramsauer's copy and with the 1861/62 annual report to the Vienna Akademie der Wissenschaften. These written accounts were also compared with Engel's illustrations and a letter to Ramsauer from Prince Leopold of Bavaria who, with his elder brother Ludwig, was present at the opening of grave 872.

The results show that Kromer's grave-groups are not completely reliable. The different contemporary accounts show discrepancies and inconsistencies which are also present in the illustrations. The letter implies that Ramsauer gave two brooches from grave 872 to the young princes and these are now lost. While the types of object in any given grave can be established, neither the individual piece surviving in a modern museum, nor the exact number of small objects, can be identified. This is important for the typology and chronology of types, such as ribbed pails, which are common at Hallstatt but are homogeneous in form and vary only in minor details which are unrecognisable from the old records.

Pauli appears to have proved that such studies as Peroni's have an unreliable factual basis and that detailed chronological conclusions drawn purely or mainly from evidence at Hallstatt must be treated with suspicion. While important, these conclusions are more distressing to students of the east-Alpine area than to us in the west. The chronology of most of the Hallstatt material present in western Europe is based on Kossack's chronology of Bavarian finds (1959) which is largely independent of Hallstatt. It is for the chronology of bronze vessels and specific objects, like the phalera in the Sompington hoard, that they are important and the dating of these pieces should be regarded with caution.

The recent study of documentation of Hallstatt by Barth and Hodson (1976) tends to support these conclusions. This shows that some records in Vienna, the so-called Zwischenkatalog compiled by Franz Krauss, can be used to eliminate objects which cannot be attributed to a particular grave. Preliminary analysis of the revised associations shows that the graves contain consistent groups of functional types but that it is still difficult to construct a fine sequence within individual types such as bronze vessels. Only preliminary results are available of more rigorous analysis of grave-groups (Hodson 1977).

CHAPTER 3

MIDDLE BRONZE AGE

MIDDLE BRONZE AGE 1

MBA1 is Burgess' Acton Park phase in southern Britain (1974, 200-202). The Nordic relations of this initial Middle Bronze Age phase were named after the Ilsmoor hoard (92) by Butler (1963a, 212-215), who gave the hoards from Acton Park and Burley (10) as British representatives, although the Burley palstaves are not of Acton Park type. Burgess (1976a, 73) equates the Ilsmoor hoard with Reinecke C1/B2, whereas it should be contemporary with B/B1, while he recognises that the Acton Park phase should have begun at a time contemporary with the Reinecke B1 and Sögel phases. This leads him to divide the Acton Park phase into parts (*ibid.*, fig. 4.9) and, using a confused version of Kersten's Nordic chronology and Holste's Tumulus chronology, to equate late MI, MIIA (presumably MIIa is meant) and MIIb with the central European phases one later than those with which they should be equated (for the Nordic chronology cf. Lomborg 1959, Abb. 1; for the correct correlation cf. Table 3, Lomborg 1973, fig. 87).

The beginning of the Acton Park phase should certainly be correlated with Reinecke B/Holste B1, the Lochham phase, and with Lomborg late MI/Kersten MIIa, the Sögel phase. This also indicates correlation with the Tréboul phase of north-western France.

MBA1 has so far been represented by the Acton Park industry, confined largely to north Wales. What of southern and eastern England at this time? Gerloff has concluded that the later part of the Early Bronze Age in this area, as represented by Camerton-Snowhill dagger graves, female burials of the Aldbourne series and the Arreton bronze industry, overlapped with Reinecke B and the Sögel phase (1975, 115-127, 144-158, 232-234) and she has been supported by Burgess (1976a, 73). Examination of certain aspects of this problem below (see p. 39-40, 68) indicate that Gerloff's general conclusions are correct. This could explain the dearth of Acton Park products in southern and eastern England; during MBA1 this area was still dominated by late Wessex and Arreton industries.

Burgess does not define the content of the second part of the Acton Park phase (1976a, fig. 4.9) but, in southern and eastern England, some time should be interposed between the Arreton and MBA2 industries. The same is true in north-eastern France, where there is a gap between the Tréboul and contemporary hoards, e.g. Forêt de Bords (50), Muids (51) and Bailleul-sur-Thérain (54), and the palstave hoards of Bronze Moyen III (Verron 1976a, 588-590) into which few hoards, e.g. Mont-Saint-Aignan (61), can be placed. Typology suggests that stop-ridge axes and developed shield-pattern palstaves should occupy this later MBA1 phase in southern England, represented by the Burley hoard (10), with side-looped spearheads, already present in Tréboul hoards, and early rapiers but hoard evidence of weapons is scanty for the whole Acton Park phase (Burgess 1974, 201).

MIDDLE BRONZE AGE 2

MBA/2 is the Taunton phase in southern Britain (Burgess 1974, 203-204) which includes almost all the Middle Bronze Age hoards from southern and eastern England. It includes Smith's 'ornament horizon' and associated material (1959) which has for some time been equated with MIII. The pitfalls of this correlation, now that Burgess (1968a) has placed the chronology of the British Late Bronze Age on a firmer footing, are shown by Thrane's chronological table (1975, fig. 123), which incorporates the most recent correlation of the Nordic and central European chronologies. The use of a late MIII date for the 'ornament horizon' places MBA2 contemporary with Ha A2, while the Rosnøen phase has to be conflated with Wilburton contemporary with Ha B1! This demonstrates the importance of correlating the British chronology with that of northern France and Burgess (1976a, 73-75) has recognised that the Taunton phase runs parallel with Bronze Moyen III. While the date of the beginning of MBA2 is rather uncertain, its end is better defined for it contains no early Urnfield Reinecke D material, not even such as is included in transitional Bronze Moyen III/Bronze Final I hoards like Malassis, Cher (Briard, Cordier and Gaucher 1969).

This suggests a conflation of Butler's Ostenfeld and Taunton phases (1963a, 215-223) and demands a reassessment of supposed Nordic MIII material in Britain, after which it will be seen that links between MBA2 and MIII are almost non-existent.

FLANGED AXES

Arreton flange axes. LIST 1. MAP 1

The Arreton type of flanged axe was defined by Britton (1963, 286, 305, fig. 18, a-b, d; Pl. XXVII, 1st and 2nd left); it is distinguished by a narrow and thin butt, usually curved, convex flanges extending from butt to blade, and by a central bevel or ridge, an incipient stop-ridge; the edge is expanded and this expansion has often been exaggerated by resharpening. With Camerton-Snowhill daggers, tanged and socketed spearheads and miscellaneous chisels and punches, Arreton axes constitute the Arreton industry of the British Early Bronze Age (*ibid.*, 284-297), Burgess's Stage V (1974, 193-194).

The distribution of Arreton Axes in Britain and Ireland is mainly southeasterly (Burgess and Cowen 1972, fig. 6, 2), with centres in Wessex, on the south coast of England, the lower Thames valley, the northern part of East Anglia and east Yorkshire. This contrasts with the distribution of contemporary daggers and spearheads (*ibid.*, fig. 6, 1, 3-4); the south coast, Thames Valley and East Anglian areas were all to be centres of later palstave production.

Associated finds link Arreton axes with Wessex II and Reinecke A2/B (*ibid.*, 179-180; Gerloff 1975, 127-128, 146-148). Nordic connections are

provided by two axes recognised by Butler (1963a, 44), one in the Plymstock hoard, Devon, (Inv. Arch. GB9, 14) and one found near Amesbury, Wilts., (Moore and Rowlands 1972, 52, pl. VII, 10) both north German flanged axes (Sudholz 1964, 22-23, 75-76, 83, Karte VIII). Only two German hoards contain such axes: Oldendorf, Kr. Halle, and Wildeshausen, Kr. Oldenburg (*ibid.* 106, no. 256; 87 no. 46). The Wildeshausen hoard also contains Sögel axes and can be dated to the late Sögel phase by its bracelet and by its wheel-headed pin, a Lochham form (Laux 1976, 27 no. 92).

Of Arreton bronzes, only the axes are widespread on the continent (Gerloff 1975, 116; Desittere 1973c, 68). Similar axes were produced during the Tréboul phase in north-western France (Briard and Verron 1976a, 45, fig. 1); these axes of type atlantique have a more rectangular butt than the Arreton type which is recognised in north-eastern France (*ibid.*, 46, fig. 2). The Muids hoard (51) shows that axes of Arreton form were still in use alongside typologically later haft-flanged axes and shield-pattern palstaves, while the sword in the Boilleul-sur-Thérain hoard (54) confirms contemporaneity with the Tréboul and Lochham phases. Lack of evidence for local bronze-working during the later Early Bronze Age in Belgium suggests that the Belgian finds are of British origin. In the Netherlands related flanged axes of Ekehaar type were derived from the north German type and Arreton axes appear to be unknown. If the French Arreton axes were local products, they were strongly influenced by the British tradition. It is significant that they are twice associated with shield-pattern palstaves, in the Forêt de Bords (50) and Muids (51) hoards, while Arreton axes and shield-pattern palstaves are not associated in Britain. The stop-ridge axes of northern France, haches à talon naissant, not always clearly distinguished from typologically earlier forms (Briard and Verron 1976a, 46), appear in Tréboul contexts contemporary with early shield-pattern palstaves (*ibid.*, 80); shield pattern palstaves are not found associated with such flanged axes in Britain outside the area of the Acton Park industry of north Wales (Rowlands 1976, 25-30).

Haft-flanged axes. LIST 2. MAP 2

Axes, with or without a stop-ridge, having flanges confined to the upper part of the blade, were treated by Smith (1959, 171-173), who termed the typologically early form with low flanges the 'haft-flanged axe' (*ibid.*, 172, fig. 6, 1-4, map 4a). Rowlands' Class 1/1 has a shield-pattern rib pendant from the bottom of the flanges (1976, 26, pls. 25, 234-272; 26 (84)); his Class 1/2 lacks this ornament (*ibid.*, pl. 25, 212-281). For Scottish material Coles distinguished his Class II, with convex flanges (1963-64, 88-94, figs. 2-3), from his Class III, with angled flanges (*ibid.*, 94-100, figs. 5-6). Burgess has promised another scheme for the northern material (Burgess and Miket 1974, 29). These short-flanged axes were the dominant Middle Bronze Age axe type in northern Britain but were rare in the south (*ibid.*, 29-30), though there are small concentrations in northern East Anglia and the lower Thames valley (Rowlands 1976, map 1). Typologically, short-flanged axes should stand between Early Bronze Age flanged axes and later palstaves, but British hoards provide little evidence for the date of their appearance (Burgess and Miket 1974, 29 n. 3).

The Muids hoard (51) demonstrates an overlap of haft-flanged axes with typologically earlier flanged axes and later shield-pattern palstaves at the beginning of Bronze Moyen; this suggests that British haft-flanged axes could have appeared while Arreton axes were still current and been used at the same time as Acton Park palstaves. The axe from Bray-sur-Somme (List 2, 4) resembles examples of Rowlands' Class 1/1, there is a similar axe from Gore End Bay, near Birchington, Kent (Rowlands 1976, 246 no. 84, pl. 26), and may be of British origin. The Dutch axe (List 2, 5) is also probably British. The question of the origin of the other French axes is complicated by the presence of a haft-flanged axe of central European form, Cressier type, variant C, Reinecke C1 (Abels 1972, 51-56), from the Seine at Oissel, Seine-Maritime (*ibid.*, 55 n. 11; Verron 1971, 51 no. 10; Briard and Verron 1976a, 68, fig. 3). This axe has angular lateral projections like the example from Fresne l'Archêveque, Eure (Coutil 1921, pl. 2, 14), and such axes (Briard and Verron 1976a, 68-69) may modify claims made by Burgess for Sögel influence through axes with geknickten Randleisten on British flanged and haft-flanged axes with such projections (Burgess and Cowen 1972, 169 n. 1; Burgess and Miket 1974, 29), for no Sögel axe with geknickten Randleisten is known in Britain. The slight lateral ridges on the axes in the Arreton hoards from Westbury-on-Trym, Gloucs. (Megaw and Hardy 1938, fig. 11, d), and Postlingford Hall, Suffolk (Ware 1846, 497, right), do not appear to justify his claim for Sögel influence (Burgess 1974, 193 n. 186).

Continental flanged axes in Britain

Beside the north German flanged axes in the Arreton hoards, a few other exotic flanged axes occur in Britain. These have been referred to as Médoc axes (Rowlands 1976, 26) but none belongs to this type as defined by Briard and Verron (1976a, 49-52). The axe in the Sidlesham hoard (37) belongs to the north French Atlantic type (*ibid.*, 45) and the butt fragment in the LBA3 hoard from Leigh, Essex (150), may belong to the same type. The notched butt of the axe in Dorchester Museum (Gerloff 1975, 118, 147, pl. 56F) relates it not to French but to central European forms, though it does not appear to belong to any common type but may be compared with a Reinecke B axe (Abels 1972, 63 no. 426). There is a similar axe from Bewtry, Yorks (Gerloff 1975, 147 n. 6). The axe from Wye Down, near Canterbury, Kent, (Rowlands 1976, 282 no. 219; Jessup 1930, 97 pl. V, 14) resembles the Reinecke A Neyruz type (Abels 1972, 9-13), though its butt is more expanded. I know of only two Médoc axes from northern France: Desvres hoard, Pas-de-Calais (56), and Pierrefonds, Oise (Coffyn 1969, 109, fig. 81).

PALSTAVES

Shield-pattern palstaves. LIST 3A-B. MAP 3

Palstaves with a U-shaped rib, shield-pattern, below the stop-ridge stand at the head of the typological sequence of palstaves in Britain and northern France (Butler 1963a, 51-54, Class IA1; Burgess 1974, 200 n. 210, fig. 31, 1, Group I; Rowlands 1976, 27-30, Class 1; Briard and Verron 1976a, 83-85). Individual examples have been considered by Burgess (1962b) and Davies (1968).

A distinctive form of large shield-pattern palstave is known in the Acton Park complex of north Wales (Burgess 1974, 200-201 n. 225-226) but these Acton Park palstaves (Grimes 1951, fig. 65) appear to be absent from southern and eastern England (Rowlands 1976, 28) and certainly do not occur in hoards in these regions. Rowlands considers that shield-pattern palstaves in south-eastern England developed from haft-flanged axes with U-rib ornament (*ibid.*, 26). His early form of shield-pattern palstave, Class 1/1, comprises examples with an angular junction between flanges and shield (*ibid.*, 27, pl. 27, 721-684) and more advanced examples with flanges and shield forming a continuous curve (*ibid.*, pl. 27, 509-699); the flanges usually continue a little below the stop-ridge; in profile, the flanges form a continuous curve with the shield rib. His developed shield-pattern palstaves are characterised in profile by an angular junction between flanges and shield rib at the stop-ridge (*ibid.*, 28, pl. 27, 974-406; 28, 407-796). Groups 2-4 are such palstaves distinguished by length; long or short ribs are often combined with the shield (*ibid.*, 29). Associations and typology set Groups 5 and 6 apart from early shield-pattern palstaves (see p. 54).

The chronology of early shield-pattern palstaves is important for they are the first type in the conventional Middle Bronze Age sequence. Neither they, nor the flanged axes from which they are derived, have been found associated with objects of the Arreton tradition of the later Early Bronze Age but there is some evidence for their occurrence at that time. The association of a shield-pattern palstave, Rowlands' 1/3 (*ibid.*, 304 no. 510), with an amber bead of Early Bronze Age form at Colchester, Essex, led Davies (1968) to argue for the appearance of these palstaves during the Early Bronze Age. Acton Park palstaves are known in Tréboul hoards from Brittany (Burgess 1974, 201 no. 225) in the eponymous hoard from Tréboul, Finistère (Briard 1956), and in the hoards from Plougerneau, Finistère, (Briard 1965, 84, 311 n. 235, fig. 24, 6-7) and Monterblanc, Monguoro, Morbihan (*ibid.*, 318 no. 425). I have suggested elsewhere that the Tréboul phase should be partly contemporary with the Arreton phase (see p. 40, 67-8).

A number of shield-pattern palstaves have been found in Nordic hoards, as far north as Hönö island, Bohuslän, Sweden (Oldeberg 1974, 333 no. 2605), and the date of these hoards is often used as a terminus ante quem for the appearance of shield-pattern palstaves in Britain, since there are no suitable Nordic prototypes (Butler 1963a, 59). Butler's discussion of these hoards (*ibid.*, 51-62) has not been superseded; some of the hoards are lost and there are now few better illustrations available than when he wrote. I have included in my catalogue all those Nordic hoards which may provide reliable chronological evidence, and the French hoard from Habsheim. The hoards from Hausberge (90), Hütvede (91), Ilsmoor (92), Stade (93) and Neuholdensleben (94) all belong to the Sögel or Valsømagle phases of late MI and the Pyritz hoard (97) is probably contemporary; the Halle (89) and Rühlow (96) hoards are early MII; the Habsheim hoard (88) is Reinecke B, contemporary with the Sögel/Valsømagle hoards. The late MI/Reinecke B horizon to which these early continental shield-pattern palstaves belong should overlap with the Arreton phase of the British Early Bronze Age when no shield-pattern palstaves are known from southern England (see p. 40). The unfinished castings in the hoards from Pyritz (97) and Stade (93) show that shield-pattern

palstaves were being produced locally in the Nordic area (Butler 1963a, 59-60).

These Nordic shield-pattern palstaves are clearly not of south-eastern English origin. Acton Park palstaves occur in Tréboul hoards in Brittany and their presence in the Voorhout hoard (85) has been confirmed by the analyses of Dr. J. P. Northover. The lugged chisel in the Voorhout hoard may be related to British Early Bronze Age examples (Burgess and Cowen 1972, 172-174). Palstaves of Tréboul or Acton Park type occur in the Ilsmoor (92), Neuahaldensleben (94) and Rühlow (96) hoards and the last hoard also contains a typologically early side-flanged palstave of similar date. The palstave from Uenlingen, Kr. Stendal, Saxony (Stephan 1956, 10, Taf. X, 1; Butler 1963a, 71 no. 18, fig. 14) is also of Tréboul/Acton Park form. The area of the Acton Park industry was outside that of the Arreton tradition (Burgess and Cowen 1972, 179) and typologically early palstaves occur, e.g. in the the Moelfre Uchaf hoard, Flints. (Davies 1949, 434-436). This suggests that Acton Park palstaves may have been developed in north Wales while the Arreton tradition was still current in southern England and were exported to Brittany and northern Germany as well as to the Netherlands.

Most of the Nordic shield-pattern palstaves do not resemble closely any common British form but have very low flanges and indistinct stop-ridge; such palstaves occur in the Hausberge (90), Hüvede (91), Seelow (95), Rühlow (96) and Pyritz (97) hoards and most examples from the south Baltic coast are of this form (Kersten 1958, Taf. 17, 227; 55, 574; 67, 647; 70, 685; Butler 1963a, 71 nos. 12-13, 16-17). The palstaves in the Habsheim hoard (88) are similar and such palstaves also occur in north-eastern France (List 3A) where they are associated with flanged axes of Arreton form and a haft-flanged axe in the Forêt de Bords (50) and Muids (51) hoards. If these associations are reliable they demonstrate combinations unknown in southern Britain (Rowlands 1976, fig. 11). Other French examples are known (Briard and Verron 1976a, 85, 85, fig. 3; Guilaine 1972, 123, fig. 34, 7; Cordier and Gruet 1975, fig. 28, 4), while similar British examples are rare (Rowlands 1976, pl. 27, 684) and absent from datable finds.

Developed shield-pattern palstaves presumably appeared in southern Britain only after the late MI/Reinecke B/Tréboul horizon. The nature of the typological succession from Arreton axes to short-flanged axes to early shield-pattern palstaves in southern Britain remains obscure for lack of hoard evidence between Arreton axes and developed shield-pattern palstaves, e.g. Burley (10), but the more advanced axes were probably introduced while the Arreton tradition was still current. Developed shield-pattern palstaves of British or related form are found in north-eastern France, but I know of only one example from Belgium and none from the Netherlands, the Voorhout palstaves being of Acton Park type (List 3B, Map 3).

The development of Middle Bronze Age palstaves: evidence from northern and central Europe

Butler (1963a, 62-65) distinguished a second group of western palstaves in the Nordic area after the finds of shield-pattern palstaves. Most important are the MII hoards from Frøjk (100) and Ostenfeld (98) which show that looped

palstaves, side-flanged and narrow-bladed, appeared before the end of MII. In central Europe, the Meikirch hoard (101) confirms a pre-Urnfield date for the development of unlooped Norman palstaves. The palstave in the Masendorf hoard (99) may not be western at all and the hoards from Pamhule Mark, Haderslev Amt (*ibid.*, 73 no. 15, pl. IXa) and Aadum Mose, Ringkøbing Amt (*ibid.*, 73 no. 14, fig. 16, 4-5), Jutland, provide little dating evidence (*ibid.*, 63). The Epe hoard (83) is probably to be dated by its British palstave rather than by its stop-ridge axe or sickle.

The Middle Bronze Age palstave series of northern France

The Middle Bronze Age palstave series of northern France has been summarised by Briard and Verron (1976a, 83-104); evidence from Brittany has been presented by Briard (1965, 84-86, 109-122, 155-157, 180; 1966b) who also comments on adjacent areas; evidence from the Paris area has been presented by Gaucher (1973). Detailed publications on the palstaves of Upper Normandy and Picardy are lacking.

In north-eastern France, about one hundred hoards, containing nearly two thousand palstaves, have been recorded (*ibid.*, table 7) and few are not Middle Bronze Age. About sixty hoards of Bronze Moyen III, containing about two thousand palstaves, are known from Brittany (Briard 1965, 110). The numerical importance of palstaves is also demonstrated in Anjou (Dépt. Maine-et-Loire), where the number of palstaves exceeds the total number of all other Bronze Age axe types (Cordier and Gruet 1975, 257, fig. 55). Some of these hoards are lost and few, especially from Normandy, have been published with adequate illustration.

Alongside shield-pattern palstaves, some of British and others of local origin, the earliest palstave type in northern France is named after the hoard eponymous for Bronze Moyen II in Brittany, Tréboul (Briard 1965, 84-86; Briard and Verron 1976a, 87-90). These palstaves are large, broad-bladed and unlooped; they may be undecorated or bear shield-pattern midrib or Y-ornament. They are not numerous, for the flanged axe was still dominant in Brittany during this phase.

The Tréboul type is easily distinguishable from the narrow Breton and shorter Norman types of Bronze Moyen III. Broad-bladed palstaves sometimes occur in hoards with Breton or Norman palstaves: Carimel, Languenan, Côtes-du-Nord (Briard 1966b, fig. 2, 3), La Chapelle (46), Mont-Saint-Aignan (61). The ornament of these palstaves is not characteristic of the Tréboul type and their flanges lack the distinctly convex profile declared, 'particulièrement typique' (Briard and Verron 1976a, 87). Large broad-bladed palstaves are common in Picardy (List 4), particularly in the Somme valley where they are predominant in the Amiens Museum (65) and Bernay-Ponthoile (66) hoards. The latter contains a Breton palstave which confirms the currency of these broad-bladed palstaves in Bronze Moyen III. Without being specific, Briard and Verron (*ibid.*, 90 n. 3) imply that these Somme palstaves belong to the Tréboul type, despite their lower flanges and greater variety of ornament. Inset ornament and side-flanges relate them to Norman and British palstaves of the late Middle Bronze Age. Other broad-bladed palstaves occur in the Dommiers hoard, Aisne, (42) and elsewhere in Picardy, Nord and Pas-de-Calais (List 4).

This Somme-Oise-Aisne group appears to be distinct from the Norman group (see pp. 47-8). It was not very productive compared with the areas further west: outside hoards, Gaucher and Mohen (1974, 122) list thirty-two palstaves, excluding examples of Breton type, and only about seventy can be added from hoards, a total of just over one hundred palstaves from Somme, Nord and Pas-de-Calais; only about sixty are known from Aisne (Lobjois 1973, 46-48). The broad blade of the Somme-Oise-Aisne palstaves shows a link with the British series and certain ornamental motifs, side-flanges and cordiform inset, can be compared to specific English forms. Some of the broad-bladed palstaves from Belgium and the Netherlands may be related to Somme-Oise-Aisne, rather than British, palstaves (List 8). Research in progress by Dr. J. J. Butler for PBF should clarify the position of Somme-Oise-Aisne palstaves.

Breton palstaves. LIST 5. MAP 4

Briard devotes an entire chapter of his volume on Breton Bronze Age metalwork to the type of palstave current there during Bronze Moyen III (1965, 109-122; Briard and Verron 1976a, 101-104). This type is distinguished by its narrow blade, slightly expanded at the edge, its short septum in relation to the length of the blade, by its straight stop-ridge, often at a distinct right angle to the flanges, and by the convex profile of the flanges, which often do not reach the butt. About 30% of Breton palstaves are undecorated; most of the remainder have a long midrib on the blade, often accompanied by slight side-flanges; other ornament, trident or inset, is usually inspired by motifs on Norman palstaves. Only about 8% of Breton palstaves are looped and there appears to be no such concomitant change in form as occurs with the Norman type.

Analysis of Breton palstaves shows a low lead content similar to that of Norman and Somme palstaves (Briard 1965, 116; Giot, Bourhis and Briard 1966, 19, 66-68, Tableaux 7-9; 1970, 18-21, Tableaux 4-5; Bourhis, Briard and Esteoule 1969, 77-78; Cordier and Gruet 1975, 265-269).

Outside Brittany, these palstaves are most common in Lower Normandy and Anjou (*ibid.*, 25) and we should follow French scholars in calling them 'Breton', rather than 'Portrieux' palstaves (Burgess 1969a, 149) after an obscure hoard (Briard and Verron 1976a, 101).

While associations with earlier (*ibid.*, 103-104) and later (Briard, Cordier and Gaucher 1969, 63) material are known, Bronze Moyen III was the floruit of Breton palstaves. In north-eastern France, Breton palstaves are associated with Norman palstaves in the Ville-d'Avray (52), Roumare Forest (58), Heuqueville (60) and Verneuil (64) hoards, and with Somme palstaves in the Bernay-Ponthoile hoard (66). There is a possible association with a Médoc flanged axe in the Desvres hoard (56).

Breton palstaves in Britain have been discussed briefly by Burgess (1969a) and Moore (1976), while other examples can be identified from Rowlands' corpus (1976). Burgess attributes Breton palstaves to three hoards: Wantage (1), Pear Tree Green (15) and Sidlesham (37). Sidlesham is of little chronological

use and I cannot identify a Breton palstave in the Pear Tree Green hoard, though Burgess may be referring to one of the palstaves lost from this hoard. There are additional examples in the Grays (9) and Gosport (11) hoards. The Grays association is not certain and the Wantage hoard contains predominantly alien palstaves; only the Gosport hoard proves the currency of Breton palstaves during the later Middle Bronze Age in southern Britain. About a score of Breton palstaves are known from Britain, considerably fewer than Norman palstaves. Most are from south-east England and Burgess remarks that, "the distribution is not at all what one would expect for material being brought from Brittany" (1969a, 151). This is probably to be explained by re-export from north-eastern France, rather than direct export from Brittany. Breton palstaves appear to have had little influence on the British series, looped Norman palstaves being more important for the development of the 'transitional' form (see p. 95).

Most of the unlooped narrow-bladed palstaves listed by Rowlands (1976, 36-38, map 9) appear to be Breton. He considers that they were a, "separate functional category ... a functionally distinct axe form"; this appears to imply that all narrow-bladed palstaves in Brittany were used for different purposes than all broad-bladed palstaves in Britain. This seems unlikely, for it suggests that all regional preferences for different contemporary axe types, e.g. winged axes and socketed axes, reflect such different uses and there is no experimental evidence that any axe type was less practical than another.

Few Breton palstaves have been recognised outside Britain and France. There are some isolated finds from Belgium and the southern Netherlands. Briard comments on narrow-bladed palstaves from north-western Germany (1965, 121) but these appear to belong to the German narrow-bladed palstave group (Sprockhoff 1941, Tof. 22, 3-4) and the palstave in the Windsbach hoard, Franconia, is probably a later form (Müller-Karpe 1959, 147, Tof. 155A, 4). The palstave from Dahlenburg, Kr. Lüneburg, Lower Saxony (Laux 1971, 213 no. 250, Taf. 74, 6) appears to be Breton.

Centre-ouest palstaves. LIST 6. MAP 9

In west-central France, between the Loire and the Garonne is found a characteristic local palstave type (Briard and Verron 1976a, 97-99). Usually unlooped, these centre-ouest palstaves are trapezoidal in form with no distinct junction between flanges and blade. The sides of the blade may be straight or convex; midrib ornament is usual on the face. On some examples the stop-ridge protrudes beyond the flanges (*ibid.*, figs. 1; 3).

Hoard associations place the centre-ouest type in Bronze Moyen III with Breton and Norman palstaves. In the hoard from Teillet-Argenty, Allier (Abauzit 1967, 342-345, figs. 2; 3A), centre-ouest palstaves occur alongside Breton and Norman palstaves and a Médoc flanged axe (Briard and Verron 1976a, 98-99, 104); four palstaves were found together in the Tumulus des Bagnettes, Ebreuil, Allier (Abauzit 1967, 339-342, fig. 1), one centre-ouest, one Breton, one looped Norman and one Haguenau (Briard and Verron 1976a, 99). A fragment of a centre-ouest palstave occurs in the transitional Bronze Moyen/Bronze Final hoard from Malassis, Cher (Briard, Cordier and

Gaucher 1969, fig. 8, 27) with Norman, Breton and Haguenau palstaves (*ibid.*, 63-64).

There are a few examples of centre-ouest palstaves from Anjou (Cordier and Gruet 1975, 257, figs. 12, 4; 44, 3; 53, 1-2); I know of only one from north-eastern France (List 6, 2). The presence of a centre-ouest palstave in the Gable Head hoard, Hants. (12) gives another link between Bronze Moyen III and MBA2 in southern Britain.

Norman palstaves. LIST 7A-B. MAP 5

In his discussion of Breton palstaves Briard (1965, 118-119) noted that the palstave type characteristic of Normandy was different from that characteristic of Brittany; a more extensive treatment has been provided by Briard and Verron (1976a, 91-95). The Norman type has a broader blade and greater variety of ornament. The distinction can be made by comparing two measurements: the width of the blade at one-third of the length of the palstave and the maximum width of the septum. On the Norman type the blade measurement exceeds the septum measurement; on the Breton type the septum measurement exceeds the blade measurement (Gaucher 1973, 230).

Norman palstaves may be unlooped or looped, only about 20% are looped (*ibid.*, 228, *Tabelle 7*). The two groups are distinct in form with few exceptions. On unlooped Norman palstaves the stop-ridge is straight but merges into the flanges in a curve; the flanges are low, straight or very slightly convex in form, merging into the butt, which often tapers in profile. This is distinct from the profiles of Breton palstaves, and of Somme palstaves, which are more convex. There is often a distinct narrowing below the stop-ridge; from this point the sides splay out to form a trapezoidal blade, usually with straight sides. There is often a casting flaw at the junction of the stop-ridge and the septum. Undecorated examples are rare, about 10% in hoards from the Paris basin (*ibid.*, 228, *Tabelle 6*). About one-third of Norman palstaves bear simple trident or related ornament (Briard and Verron 1976a, 93). The inset motif is also very common on unlooped examples. This may be cordiform, triangular, semi-circular or multiple; plain or flanked by U- or V-ribs; divided by a long or short midrib; containing one or more pellets. Single and multiple rib ornament, vertical, splayed or V-shaped, is also known. Grooved ornament occurs occasionally (Briard and Verron 1976a, fig. 2).

A few looped palstaves are merely the unlooped form with a loop added (*ibid.*, 94, fig. 3, right) but the looped Norman palstave is usually a most distinctive axe (*ibid.*, fig. 3, left). This has a round stop-ridge forming a continuous curve with the flanges which often stop well below the butt. The blade retains its straight-sided trapezoidal form but is narrower than the unlooped blade. Ribbed ornament is dominant, a single midrib, a trident, Y- or V-motif or a more complicated combination. Grooved or inset ornament and completely plain blades are all rare. The loop is often miscast. Looped Norman palstaves are close to looped Breton palstaves in blade shape and ornament but distinct in the form of the flanges and stop-ridge. The appearance of looped Norman palstaves in later hoards (*ibid.*, 92) may have been influenced by the Breton type.

Few Norman palstaves have been analysed but available results show a low lead content similar to that of Breton and Somme palstaves (Giot, Bourhis and Briard 1970, 18-21, Tableaux 4-5, 13, 15 no. 602; Bourhis, Briard and Esteoule 1969, 77-78; Edeine 1964; Verron 1975, 57; Cordier and Gruet 1975, 267). One exception is a looped palstave in the La Chapelle hoard (46) which contains 3.5% lead.

The distribution of Norman palstaves is concentrated in Upper Normandy on the lower Seine valley and is more scattered over the rest of the Paris basin. In Eure and Seine-Maritime alone, over 1,600 palstaves are known from seventy-five find spots, including about fifty hoards (Gaucher 1973, 228-229, *Tabelle 7*, fig. 9; Briard and Verron 1976a, 95; Verron 1976a, 588). Most of these palstaves should be Norman. Palstaves are much scarcer in the rest of north-eastern France, though some additions (Blanchet 1976a, 32) can be made to Gaucher's list of thirteen palstave hoards (1973, *Tabelle 7*) and his figure for Oise (*ibid.*) is also too low (Blanchet and Lambot 1975). Most of the palstaves in the Paris area hoards (Gaucher 1973, *Tableau 4*, fig. 8) are Norman, and the exceptions Breton: Ville-d'Avray (52), Fay-les-Nemours (63), Verneuil (64), Sucy-en-Brie (68), Aubergenville (69), Blaru (70), Chambourcy (71), La Queue-les Yvelines (72). The palstaves in the Somme valley hoards are certainly not Norman (see p. 44-5): *Amiens Museums* (65), Bernay-Ponthoile (66). The presence of a bronze mould for looped Norman palstaves at Vron, Somme (Gaucher and Mohen 1974, 97, 119, Vron 1, *ill. 55*), should be noted but such palstaves are still rare in this area. The only hoard from Picardy which seems to me to contain true Norman palstaves is La Hérelle (55). There is a possible Norman palstave residual in the Cambrai area hoard (53). A looped Norman palstave comes from Vincly, Pas-de-Calais (Mohen 1972, 447, fig. 2, 2; Gaucher and Mohen 1974, 119, Vincly). The Dommiers hoard (42) contains two broad-bladed palstaves which are certainly not Norman; the others are similar to the Norman type in form and ornament but do not appear to be true Norman palstaves and they are remote from the main concentration of finds on the lower Seine. More details of Aisne palstaves are required before they can be certainly attributed to any particular type. Many of the palstaves listed by Gaucher and Mohen (*ibid.*, 122) as Norman belong to the Somme-Oise-Aisne group and I would dispute the claim that Norman palstaves, 'gardent un rôle essentiel en Picardie, dans la Nord de la France' (Briard and Verron 1976a, 95).

In Brittany Norman palstaves are found in the *Bronze Moyen III* hoards from Carimel, Côtes-du-Nord, and La Jossais, Loire-Atlantique (Briard 1966b, figs. 2, 14; 5, 2), and in the Teillet-Argenty and Ebreuil finds with *centre-ouest*, Breton, Haguenau and Médoc axes (see p. 46). Norman palstaves are associated with Bignan bracelets in the hoards from Malassis, Cher (Briard Cordier and Gaucher 1969, 63-64), Anzy-le-Duc, Saône-et-Loire (*ibid.*, 66), and in the first hoard from La Varenne, Sermizelles, Yonne (Joly 1959, 107, fig. 19). The hoards demonstrate that Norman palstaves were still current at the transition from *Bronze Moyen III* to *Bronze Final I* and there are typologically late Norman palstaves in the *Bronze Final I* hoard from Choisy-le-Roi (120). The Mont-Saint-Aignan hoard (61), with its solid-hilted rapier, indicates that unlooped Norman palstaves appeared early in *Bronze Moyen* (Briard and Verron 1976a, 95; Verron 1976a, 588, 590). Associations with

Bignan bracelets at Longchamps (49) and Le Hanouard (59) and with pins at Baux-Sainte-Croix (43) confirm a Bronze Moyen III date for the floruit of Norman palstaves (Verron 1976a, 590).

There are few Norman palstaves from Anjou, where the Breton type was dominant; most of the Norman examples are looped (Cordier and Gruet 1975, 257-258). Two examples come from the Doubs at Verdun, Saône-et-Loire, (Bonnamour 1969, 11-12, pl. III, 7-8) and another probably from the same area (*ibid.*, 12, pl. III, 10). In south-eastern France, Norman palstaves occur at Châteauroux-sur-Durance, Hautes-Alpes (Courtois 1960, fig. 19, 1), Montmorot, Presilly, Clucy and Nance, Jura (Millotte and Vignard 1960, 14, pl. II, 20-23). There are a few from Languedoc (Guilaine 1972, 123-124, 207, figs. 34, 2-3, 11; 77, 2; Roudil 1972, 150, fig. 81, 6). Norman or related palstaves are known from Oltingen, Baselland, and Conthey, Valais, Switzerland (Osterwalder 1971, Taf. 25, 3-5) and the late Tumulus date of the Meikirch hoard (101) supports the French chronology. The narrow-bladed palstave in the Ostenfeld hoard (98) suggests that looped Norman palstaves appeared before the end of MIII. Other possible Nordic examples of Norman palstaves are in the hoard from Pamhule Mark, Haderslev Amt, Jutland, with an undiagnostic palstave (Butler 1963a, 63, 73 no. 15, pl. IXa, left); True, Randers Amt, Jutland (*ibid.*, 72 no. 40, pl. VIIIb, 2); Dragsholm, Holbaek Amt, Zealand, (Aner and Kersten 1976, 45 no. 786 I, Taf. 32, bottom left) and between Barslöv and Välluv, Scania (Butler 1963a, 72 no. 38; Oldeberg 1974, 19 no. 103). I know of only one certain example of a Norman palstave from Belgium (List 7A, 7); the palstave in Nijmegen Museum may be Norman (List 8, 7).

There are more than forty Norman palstaves from hoards in southern Britain, though they have never been recognised as such. Many of Rowlands' looped narrow-bladed palstaves are Norman, while others are Breton or transitional (1976, 36-38, map 9); unlooped Norman palstaves are included in his Class 3/2 (see p. 53). Seventeen or eighteen unlooped Norman palstaves are known from five or six hoards in Hampshire, Sussex and Dorset: Dewlish (6), Gable Head (12), Pear Tree Green (15), ?Leavington House (20), Marshall Estate (32), Blackrock (34); twenty-six looped Norman palstaves are known from eleven hoards in Hampshire, Sussex, Dorset, Devon, Berkshire and Cambridgeshire: Wantage (1), Grunty Fen (103), Crediton (5), Dewlish (6), Grimstone (8), Gosport (11), Gable Head (12), Pear Tree Green (15), Swanwick (16), Leavington House (20), Marshall Estate (32). South coast finds predominate (Map 5) and Norman palstaves occur most often in the large MBA2 hoards of east Hampshire and west Sussex. I have not sought isolated finds but these appear to be scarce. One important example is the fragmentary looped palstave from the bottom of the Angle Ditch enclosure on Handley Down, Dorset (Pitt Rivers 1898, 106-107, pl. 273, 1; Smith 1959, 185 n. 1; Salisbury Museum Pitt Rivers Collection 2C 4 13; Fig. 27, 8); this palstave was almost certainly used in digging the enclosure ditch. The fragmentary state of the palstave renders precise identification a little uncertain but, if not Norman, it is very little later.

The palstave series of Belgium and the Netherlands

Outside the Voorhout hoard (85), shield-pattern palstaves are rare in Belgium and the Netherlands (List 3A, 11-12; 3B, 9-10). Developed flanged

axes were probably more common during the early Middle Bronze Age in the Netherlands and, perhaps, later; there are identical examples in the Voorhout and Veenenburg (125) hoards. Stop-ridge axes of Vlagtwede type are found mainly in the north-eastern Netherlands and probably form the western margin of a Nordic distribution (Butler 1963b, 196-198, 210, fig. 9); the only associated find, Epe (83), shows that they were probably still in use late in the Middle Bronze Age.

The local palstave series of the Netherlands has been described by Butler. In the north three types are recognised: plain, side-flanged and Oldenburg (1963b, 200-203, 210-212, figs. 11-14) all variants of Sprockhoff's 'slender palstave type' (1941, Abb. 35a; Sudholz 1964, 31-33). The distribution of these palstaves is concentrated in the north-eastern provinces of the Netherlands, with a single side-flanged palstave from the Rhine at Nijmegen. From north-west Germany, Bergmann lists plain and side-flanged palstaves to which the Dutch types are related (1970, Teil B, 41, Liste 106-107, Taf. 6, 1-2, Karte 46). Use of the term 'Westeuropäisches' to describe these German palstaves (*ibid.*; Laux 1971, 83-84) is misleading; neither they, nor Bergman's 'Westeuropäisches Absatzbeilen' (1970, Teil B, 41, Liste 105, Taf. 5, 20, Karte 46), show significant influence from the British or French series, only a close similarity with the Dutch and Belgian series.

Among the small number of palstaves known from the south-eastern Netherlands Butler distinguishes several types (1973b, 321-329, Abb. 1-5): large and small, plain and ribbed, narrow and tapering, looped and unlooped. A fragment of a bronze mould was found in the Meuse at Buggenem, Limburg. The distribution of these lower Meuse palstaves in the Netherlands is concentrated in the south-east with outliers to the north and west (*ibid.*, Abb. 6); Belgian finds confirm the lower Meuse concentration (Map 7). The prehistoric distribution overrides modern political boundaries which distort the true picture, for lower Meuse palstaves occur in adjacent parts of Germany. Sudholz has dealt with those found east of the Rhine (1964, Taf. 34, 3-4, small, looped; 39, 3, large, looped; 24, 4; 31, 4, ribbed; 38, 1-2, 4, large, unlooped; 38, 3; 39, 1, small, unlooped) and there is a bronze mould for a large, looped example from the R. Lippe at Werne, Kr. Lüdninghausen (*ibid.*, Taf. 37). An additional lower Meuse palstave from Lower Saxony comes from Otersen, Kr. Verden (Schunemann 1975, 65, Abb. 10). On the right bank of the Rhine there are examples from Düsseldorf, looped, and Porz, unlooped (Marschall, Narr and von Uslar 1954, 63, 102, Abb. 18). West of the Rhine three are known from Kr. Geldern, at Wankum and Wetten (Geschwendt 1960, Taf. 15, 1-3) and three more from Kr. Krempen-Krefeld, at Hinsbeck, Bracht and Krempen (Loewe 1971, Taf. 21, 4, 6, 8). Lower Meuse palstaves are absent from hoards and are only dated by their typological resemblance to north-west German palstaves of MII (Butler 1973b, 329). There are four Nordic palstaves of Sögel or MII date from the Netherlands (List 10, 4-7). Of the palstaves of probable British or north-eastern French origin (List 8, 6-8, 11-12) all but the example from Norg, Drenthe, could be part of the same distribution pattern as the finds from Belgium.

No systematic work has been published on Belgian palstaves and none is assuredly known to belong to a hoard (*ibid.*, 329, n. 13). Shield-pattern, Breton and Norman palstaves are scarce; lower Meuse palstaves may have

been produced in north-eastern Belgium. Other palstaves have been listed by Desittere (1976, 89-90); most appear to be of British or Somme-Oise-Aisne origin (List 8, 1-5, 9-10). The developed flanged axes known in adjacent areas appear to be absent from Belgium.

Neither in Belgium, nor in the Netherlands, do local palstave types appear to have been produced after the Middle Bronze Age.

Nordic palstaves. LIST 10. MAP 9

The earliest Nordic palstave from Britain or the Netherlands is the example from Emmercompascuum, Drenthe (List 10, 4), a couple of kilometres from the German border. This palstave, with Y-ornament, belongs to the Sögel-Valsømgøle horizon of late MII (Lomborg 1968, 108, fig. 2, 4) and is probably an outlier of the north-west German distribution (Bergmann 1970, 1970, Teil B, 27, Liste 46, Taf. 3, 7, Karte 16). It is striking that these distinctive palstaves associated with shield-pattern palstaves in Nordic hoards, e.g. Ilsmoor (92) should be absent from western Europe.

The Driffield palstave (List 10, 3) belongs to the 'common north European type' of MII (*Ibid.*, 37, Liste 86, Taf. 5, 1, Karte 35; Sudholz 1964, 29-30, Liste 4, Karte X), widespread in north-west Germany and Westphalia, and the Mitcham palstave (List 10, 2) belongs to a variant of this type with a narrow midrib (Bergmann 1970, Teil B, 37, Liste 88, Taf. 5, 3). Laux dates this group of Palstaves to late MII and early MIII in the Lüneburg area (1971, 81, Tof. 74, 1-5). The Epe palstave (List 10, 6) is also MII, a Nordic form rare so far west (Laux 1971, 83; Sudholz 1964, 35-36, Karte IX). The origin of the Wellington palstave is even more remote (List 10, 1); it appears to be a Great Polish type of MIII date, otherwise unknown west of the Elbe (Kostrzewski 1963; von Müller 1973). The palstave from the barrow at Den Burg, Texel (List 10, 7), is probably MII.

Rowlands claims that a palstave from the Thames near London (1976, 319, no. 708), now in the Pitt Rivers Museum, Oxford, is Nordic but it belongs to no regular Nordic type.

Bohemian palstaves. LIST 11. MAP 9

The evidence of the Neuholdensleben hoard (94) suggests that the two Bohemian palstaves from Britain could have reached there as early as the beginning of the Middle Bronze Age. The Ilington palstave (List 11, 2) was found within an ancient field system, in an area rich in Bronze Age occupation, and it seems unlikely that it was not an ancient import. There are only two Bohemian palstaves from France (Briard and Verron 1976a, 122) and I know of none from Belgium or the Netherlands.

The Middle Bronze Age palstave series of southern Britain

The only comprehensive survey of the Middle Bronze Age palstave series of southern Britain is that of Rowlands (1976, 27-40), whose classification will be considered below. It is based on that of Butler (1963a, 48-59), whose main purpose was comparison with continental types, especially in the Nordic area. In her reappraisal of the British Middle Bronze Age, Smith (1959,

164-168, 176-177, Appendices 1-2) proposed a simple classification of Middle Bronze Age palstaves which she distinguished from Late Bronze Age forms. Burgess (1974, fig. 31) illustrates the Anglo-Welsh palstave series, though all his examples save one come from Wales and the Marches.

My purpose is not to propose another classification of the British palstave series, but to compare with continental series, particularly that of northern France. France was not Butler's primary concern, though he often refers to Breuil's article of 1905; Burgess comments briefly on the French material (1969a; 1974, 203 n. 245-247); Rowlands is a little more explicit (1976, 28, 30, 32-33, 36-37, 149-152, pls. 52-53). The full extent of relations between southern Britain and northern France, as exemplified by palstaves, has not been recognised.

The last three groups of Rowlands' shield-pattern class (1976, 29-30) are best dealt with separately from early shield-pattern palstaves. Class 1/5a is characterised by full leaf-shaped flanges, crinoline blade and indistinct shield-pattern; a few examples are looped. These palstaves are most common in Hampshire (*ibid.*, map 3) and they occur in all the largest south coast hoards: Gosport (11), Gable Head (12), Newport-Fairleigh (18), Pear Tree Green (15), Marshall Estate (32) (*ibid.*, fig. 11). This indicates that they were most common during MBA2. In only two hoards are they found with typologically earlier shield-pattern palstaves: Burley (10) and Prittlewell, Essex (*ibid.*, 235 no. 44, pl. 4; the looped palstave is clearly 1/4, not 2/4). In both cases the hoard contains only a simple early palstave. 1/5b palstaves have a crinoline blade, usually bearing psi-ornament; they are often looped and can have ribs in the septum. They are set apart from other shield-pattern palstaves by their side-flanged blades (*ibid.*, pl. 28, 517-561). These palstaves are found principally in Hampshire and the lower Thames valley (*ibid.*, map 3). All hoard associations are MBA2 (*ibid.*, fig. 11), 1/5b palstaves are never found with typologically earlier forms. 1/6 is a small group similar in form to 1/5a and 1/5b with inset ornament divided by a long midrib (*ibid.*, pl. 28, 831). This group is concentrated in Essex and there is no evidence for its appearance before MBA 2. Rowlands' comparison of 1/5 and 1/6 palstaves to the Norman type (*ibid.*, 30) is quite unconvincing; size, form and ornament are all different.

Rowlands appears to place too much emphasis on the shield-pattern motif as a criterion for classification. 1/5b palstaves should surely be grouped with side-flanged palstaves; there seems to me to be no reason why, e.g. the two looped side-flanged palstaves in the Pear Tree Green hoard (*ibid.*, 241 no. 66, pl. 6(66) 7-8); Fig. 8A, 12-13) should be separated between 1/5b and 2/2. Associations and ornament set 1/6 palstaves apart from shield-pattern palstaves. Only 1/5 appears to include some genuine shield-pattern palstaves, e.g. in the Titchfield hoard (*ibid.*, 243 no. 72, pl. 5).

Side-flanged palstaves, excepting 1/5b, constitute Rowlands' Class 2 (*ibid.*, 30-32, map 4). The typologically early form, 2/1, retains the continuous profile of stop-ridge axes with thicker blade, higher stop-ridge and, usually, a midrib (*ibid.*, pl. 29, 731-525, cf. pl. 26, 252-238). This form occurs in the Thames valley and southern England, but is absent from hoards in this area. Associated finds from other areas suggest that it was present

in MBA1 Burgess' 'early ribbed palstaves', side-flanged with protruding stop-ridge and angular junction in profile between flanges and blade, appeared in the Acton Park complex (1964 120 n. 15-16; Grimes 1951, fig. 65, 6). On the continent, forms transitional to true palstaves, with high stop-ridge and midrib, occurred in Tréboul hoards (Briard and Verron 1976a, 80-81) and in early MII hoards, e.g. Rühlow (96); related axes are known in the Paris area, e.g. with low stop-ridge, in the early Bronze Moyen hoard from Plaisir, Yvelines (Gaucher 1973, 218-219, fig. 6A).

Developed side-flanged palstaves have a protruding stop-ridge with an angular junction in profile between flanges and blade. 2/2 palstaves have a widespread distribution, but are characteristic of the upper Thames valley (*ibid.*, pl. 29, 838-(121), map 2). Hoard associations (*ibid.*, fig. 111) are overwhelmingly of MBA 2, though the hoard from Wragby, Lincs. (*ibid.*, 249 no. 92; Davey 1973, 118, figs. 236-238), includes a developed shield-pattern palstave with two side-flanged palstaves and the Near Canterbury hoard (24) contains a similar palstave alongside three side-flanged palstaves. The Wragby find may have been part of a larger hoard (*ibid.*, 94). Rowlands attributes the side-flanged axes in the Rühlow (96) and Frøjk (100) hoards to 2/2, though the Rühlow axe is surely an earlier form, which removes his doubts about the feasibility of such dating (*ibid.*, 31). 2/3 palstaves are larger than 2/2, always with a crinoline blade and never looped (*ibid.*, pl. 29, 529-678). This is predominantly a south coast type (*ibid.*, map 4), occurring exclusively in MBA 2 hoards. 2/2 palstaves normally bear midrib ornament while 2/3 have a group of short ribs below the stop-ridge and a midrib or ridge on the lower part of the blade. It is presumably this motif which led Rowlands (*ibid.*, 32) to attribute the broad-bladed palstaves in the Mont-Saint-Aignan hoard (61) to 2/3, though I cannot find closely comparable British examples. The side-flanged palstave in the La Chapelle hoard (46) 16, probably belongs to 2/2. High-flanged palstaves, usually looped with midrib ornament, constitute 2/4, a small group with westerly distribution (*ibid.*, map 4).

Rowlands (*ibid.*, 32-33, map 5) has named his third class of palstaves after the Birchington hoard (23). These palstaves are unlooped with low flanges, crinoline or triangular blades, usually with inset ornament. 3/1 palstaves have a broad blade, crinoline or triangular; 3/2 have a narrower triangular blade. Most 3/2 palstaves are Norman. Class 3 palstaves are thinly spread over south-east England with concentrations on the Hampshire and Sussex coast and in east Kent. Hoard associations are MBA2, though there is a shield-pattern palstave in the Near Canterbury hoard (24) (*ibid.*, fig. 11). The palstave in the Epe hoard probably belongs to 3/1, as do the broad-bladed palstaves with inset ornament found between the Aisne and the Rhine (Lists 4, 14-19; 8, 9-12) and the palstave with triangular ornament in the Gisors hoard (47) 1.

Palstaves of Rowlands' Class 4/1 are distinguished by an ill-defined stop-ridge, flanges joining to form a curved- or shield-shaped motif and a broad blade, often with a medium ridge (*ibid.*, 33-34). There is a particularly fine example from Billingham, Isle of Wight (Carisbrooke Castle Museum; Fig. 28, 3). The majority of these palstaves have been found on the Isle of Wight, where they predominate in most hoards; most other examples are from adjacent areas of the mainland (*ibid.*, map 6). Since these palstaves appear to

have been produced mainly on the Isle of Wight, it seems more appropriate to refer to them as 'Isle of Wight palstaves', rather than 'Werrar palstaves' after a small hoard from an obscure place not readily associated with the island. The British distribution of Isle of Wight palstaves has been examined using regression analysis (Hodder 1974, 176-177, 182, fig. 19, 10). The conclusion reached was that the distribution covers a localised area and is similar to that of, 'commoner and coarser products such as tiles and coarse pottery'. This seems to suggest that Isle of Wight palstaves were a common tool produced for distribution within a certain region and rarely found outside that region. Rowlands compares Irish and Scottish axes and Bohemian palstaves with Isle of Wight palstaves (*ibid.*, 34) but French parallels are more relevant. Within the group of early French palstaves (Briard and Verron 1976a, 83, fig. 1) are examples which resemble the Isle of Wight type (List 12). These French palstaves should be related to local shield-pattern palstaves with indistinct stop-ridge of early Bronze Moyen (List 3A), while associated finds of Isle of Wight palstaves, e.g. Gable Head (12), Pear Tree Green (15), Swanwick (16), indicate a MBA2 date. A French origin for Isle of Wight palstaves cannot be excluded.

In connection with Isle of Wight palstaves, Rowlands' suggestion (1976, 130) that the island was still joined to the mainland during the Bronze Age is implausible; it would have been cut off during the Mesolithic period (Oakley 1943).

Class 4/2 palstaves have an irregular stop-ridge and a narrow midrib, sometimes slightly recessed. This type appears to be confined to southern Hampshire (Rowlands 1976, 34), occurring in the Gosport (11) and Pear Tree Green (15) hoards and at the Chalton settlement (Fig. 26, 6).

Large, looped palstaves with broad blades form Rowlands' Class 5 (*ibid.*, 34-36). 5/1 palstaves have low flanges and thick midrib or trident ornament; 5/2 have high flanges. The former are spread thinly over southern, eastern and midland England, whereas the latter are largely confined to the south-east (*ibid.*, map 7). 5/1 palstaves occur in several MBA2 hoards (*ibid.*, fig. 11) but the more massive forms with thick midrib (*ibid.*, pls. 23, 6; 31, 448) occur in LBA1 (see p. 95). 5/2 palstaves, like unlooped high-flanged palstaves of Class 6 (*ibid.*, 36, map 8), occur in MBA2 hoards in south-western England.

Double-looped palstaves. LIST 13

A few palstaves from the British Isles have a loop on either side of the blade. Most come from south-west England, particularly Somerset. There is one reliable associated find, the West Buckland hoard (30), and one less reliable from central Wales (List 13, 13). These palstaves are massive in form with comparatively narrow blades in proportion to broad septa. The blades invariably bear a rib, often of broad conical form.

Several studies of double-looped palstaves have been made (Crawford 1911-12; Gray 1905; 1937; Childe 1939) which related them to the double-looped palstaves of the Iberian peninsula. Savory has subsequently shown that the peninsular palstaves are different in form from the insular ones, being usually longer with larger loops and hexagonal or side-flanged blade

sections; the conical rib is absent (1958b; 1966-68). On the rather slender evidence of the presence in the Arganil hoard, Beira, Portugal, of a fragment of a ring-socketed sickle of British form alongside a double-looped palstave (de Castro Nunes 1957), he suggested that the Iberian palstaves may have been derived from the British.

The British distribution of double-looped palstaves (Rowlands 1976, map 10), indicates that their origin should be in south-west England. This is the area of the Somerset Middle Bronze Age ornament hoards to which West Buckland belongs. Four palstaves in the Taunton hoard have the broad V-groove motif present on the West Buckland palstave (Inv. Arch. GB43, 23-26). Broad midribs are also known on high-flanged palstaves (*ibid.*, 28; Inv. Arch. GB45, 2; Eglesham Meadow hoard (7)) and on broad-bladed palstaves of LBA1 (see p. 54, 95). The 'central Wales' association, with a gold torc, also suggests a Middle Bronze Age origin for double-looped palstaves (Eogan 1967, 160-161).

A dozen double-looped palstaves are known from France (Briard and Verron 1976a, 109-112; Cordier and Gruet 1975, 259-260, fig. 58). The more northerly examples are probably double-looped versions of local palstaves (Briard and Verron 1976a, 109) while the others are probably of Iberian origin or inspiration. Associated finds are of Bronze Final II or III date (*ibid.*, 110).

The proportions of the Deinze palstave are those of an Iberian example and the side-flange with midrib section can degenerate into two grooves, e.g. the example from Prov. Coruña, north-western Spain (Monteagudo 1965, 31 no. 57, lam. 2), given a mid-ninth-century date.

Further north, there is an undecorated example, also of Iberian proportions, from Wildeshausen, Kr. Oldenburg, Lower Saxony (Sprockhoff 1941, 60, Abb. 52; Sudholz 1964, 33). One of the French double-looped palstaves, from Tarbes, Hautes-Pyrénées, is similar (Briard and Verron 1976a, 109, fig. 3, 3). There is another undecorated example from Svanshals, Ostergötland, Sweden (Oldeberg 1974, 295 no. 2307).

Palstave distribution

The distribution of Middle Bronze Age palstaves in those parts of Europe bordering on the Channel and the North Sea shows several distinct regional divisions. In the west, Breton palstaves scarcely penetrate Lower Normandy. Norman palstaves are most numerous in the lower valley of the Seine but occur in some quantity as far south as Paris. The Somme-Oise-Aisne group is more heterogeneous but appears to be distinct from the Norman area. Lower Meuse palstaves are found in the south-eastern Netherlands and in northern and north-eastern Belgium. North Dutch palstaves are mainly confined to the eastern provinces of the Netherlands. The western Netherlands, western and southern Belgium and the adjacent parts of France: Nord, Pas-de-Calais and Ardennes, appear to be devoid of local palstave types and this area forms a boundary between the Nordic province, of which the North Dutch and Lower Meuse palstaves represent the western margin, and the Atlantic province, represented by British and French types.

In Britain, the most distinct regional group comprises the high-flanged palstaves of south-western England concentrated in Somerset, Devon and Cornwall. Two main concentrations of palstave hoards are known in south-eastern England, on the east Hampshire-west Sussex coast, and along the valley and estuary of the Thames. Notwithstanding recent finds, Smith's maps (1959, 169) still give an accurate picture of the distribution of Middle Bronze Age palstave hoards in southern England. Other groups can be recognised. Double-looped palstaves supplement the south-western group. In the south coast group, Isle of Wight palstaves are common in the west and side-flanged palstaves in the east.

There is little evidence for continental influence in the south-western group; sixteen hoards contain south-western palstaves (Rowlands 1976, fig. 11) but these hoards contain only a single continental palstave, the looped Norman example from Crediton (5); south-eastern palstaves are also rare (for what follows, see Tables 7-8):

Hoard	South-western	Other British	Imported	
16	39	4	1	= 44

More than 10% of other palstaves in hoards recorded by Rowlands (*ibid.*) are imports:

Hoard	British	Imported	
70	431	51	= 482

Four south coast hoards: Marshall Estate (32), Pear Tree Green (15), Newport-Fairleigh (18), Gable Head (12), together contain one hundred and sixty palstaves, about 30% of the total number of palstaves in hoards recorded by Rowlands. Three of these hoards: Marshall Estate, Pear Tree Green, Gable Head, together contain twenty-nine imported palstaves, c. 56% of the total from British hoards. Outside the Hampshire-Sussex coastal area only four hoards from southern England certainly contained ten or more Middle Bronze Age palstaves: Burnham (2) eighteen, Birchington (23) fourteen, Taunton (Inv. Arch. GB 5) twelve, Leopold Street, Oxford (Inv. Arch. GB 43) ten. The Stibbard hoard, Norfolk, is recorded as having contained about seventy 'celts' (Inv. Arch. GB 50) but the palstaves, like the spearheads in this hoard, are miniatures c. 10 cm and c. 17-18 cm long respectively. French hoards appear to have contained far more palstaves than their British counterparts:

	Hoard	Palstaves
Southern England	86	526
North-eastern France	<u>c.</u> 100	<u>c.</u> 2,000
Brittany	<u>c.</u> 60	<u>c.</u> 2,000

(see p. 45, 48, above).

The largest British palstave hoards contain the highest numbers of imported palstaves, predominantly Norman; both these factors indicate influence from France specifically from Upper Normandy. There is little evidence from Norman palstave hoards for reciprocal influence; I can identify only

two palstaves of probable British origin in Norman hoards, the side-flanged palstave in the La Chapelle hoard (46) 16 and the palstave with triangular inset in the Gisors hoard (47) 1, and neither form is particularly characteristic of the south coast hoards. Isle of Wight palstaves appear to be absent from Norman hoards. Metal analysis should provide further evidence and Northover (1977, 66; pers. comm.) has suggested that the high nickel content of some palstaves from the Isle of Wight may be a continental feature, but few analyses of Norman palstaves are yet available. The quantity of bronzes in Normandy suggests that there was no shortage of metal there and the presence of Norman palstaves in southern England with the rarity of English palstaves in Normandy suggests that bronze was being acquired from Normandy. In return, British tin could be invoked, but also non-metallic material of which we have little evidence.

Palstaves of British form, or actual exports, occur in the Somme-Oise-Aisne group in the Bernay-Ponthoile (66), Amiens Museum (65) and Dommiers (42) hoards. The comparanda for these side-flanged, inset and psi-ornamented palstaves are mainly in hoards from Kent and Sussex; isolated finds in Belgium and the southern Netherlands (List 8, 1-2, 6, 9-12) probably represent a continuation of the same distribution. There is little overlap between the distribution of these palstaves and the Lower Meuse and North Dutch types.

While the palstave was the dominant tool of the later Middle Bronze Age in southern Britain, this was not the case in the north. Palstaves of Middle Bronze Age date are rare in the six northern counties of England beyond the Humber-Mersey line; as in Scotland, short-flanged axes were dominant (Burgess and Miket 1974, 29-30). Palstaves occur in only one hoard of the northern Middle Bronze Age, Hotham Carr, Yorks. (Burgess 1968b, 3-5, fig. 3, 2, 6-7), and one of these is probably Irish. Isolated examples of Irish and Anglo-Welsh palstaves are also known (*ibid.*, fig. 2, 1-4, 8). Coles (1963-64, 132-141) lists fifty-one Middle Bronze Age palstaves from Scotland, though some of his flanged axes could be classed as palstaves (*ibid.*, 92, 102; Burgess and Miket 1974, 28-29 n. 2). Palstaves occur in four Scottish Middle Bronze Age hoards: Greyfriars Church, Dumfries (Coles 1963-64, 151, fig. 18, 1-3), Craig-a-Bhodaich, Sutherland (*ibid.*, 155, fig. 18, 7-8), Kirtomy, Sutherland (*ibid.*, 155, fig. 17, 10-11), Caddonsill, Wigtownshire (*ibid.*, 156, fig. 17, 5-9). Both Irish and Anglo-Welsh palstaves are known, but none of continental type, reflecting the lack of continental associations of northern short-flanged axes (Burgess and Miket 1974, 29).

The palstave series of Wales has been studied by Burgess, but little material has been published (1962b; 1964; 1974, 203 n. 239). Early palstave production in north Wales was important enough for him to use the Acton Park hoard as the eponym for his first phase of the British Middle Bronze Age. Shield-pattern palstaves were especially common in north Wales, side-flanged palstaves in the south (1974, 200-202). This originality was subsequently lost and southern English forms appeared (*ibid.*, 203 n. 239; Smith 1959, 186-187). There appear to be no continental palstaves in Welsh Middle Bronze Age hoards.

Palstaves appeared in Ireland during the Middle Bronze Age (Eogan 1964, 270-271) or, in Harbison's terminology, Phase 4 of the Earlier Bronze Age

(1973, 122). The Irish series is distinguished by the small size of its implements (Burgess 1974, fig. 32). Anglo-Welsh palstaves are rare (Eogan 1964, 270) and large palstave hoards appear to be unknown. I am not aware of any continental palstave from Ireland.

Central Midland England, north of the Thames valley, appears to have been outside the production areas to the south, east and west (Smith 1959, map 3; Table 2). More recent surveys than that of Rowlands show that only eight palstaves are known from Warwickshire (Thomas 1974) and eighteen from Staffordshire, though seven of these are looped and may be late Bronze Age (Gunstone 1964; 1971-72; Robinson 1974). There are five Middle Bronze Age palstaves from Cheshire and fifteen from Lancashire (Davey and Forster 1975). Middle Bronze Age palstave hoards are unknown in these counties.

There is a striking contrast between the proportions of palstaves in hoards to isolated finds from the counties of southern and eastern England. Hoard finds predominate in Hampshire, Sussex and the Isle of Wight, while isolated finds are almost exclusive in Cambridgeshire, Norfolk and Suffolk (Table 8).

Southern and eastern England had more in common with the continent than with northern England, Scotland and Ireland in terms of late Middle Bronze Age axe types. Continental imports and the size of local hoards relate the Hampshire-Sussex coast especially to Upper Normandy; south-eastern England had more contact with Picardy and the areas to the lower Rhine. Palstaves were common in East Anglia but hoards and imports are rarer than further south. The southern palstave tradition seems to have been dominant to the Humber and north Wales but not further north, where short-flanged axes were dominant. Ireland also had a separate tradition; Rowlands lists six finds of Irish palstaves from southern England (1976, 300-336 nos. 455, 524, 553, 836, 946, 948), but many finds of supposed Irish origin in southern England are suspect (Miss M. Ehrenberg).

TOOLS AND WEAPONS

Socketed axes. LIST 14. MAP 10

It was once axiomatic that the appearance of socketed axes marked the beginning of the Late Bronze Age in Britain but it is now recognised that they were produced during the later Middle Bronze Age (Burgess 1974, 203, n. 244; 1962a; Rowlands 1976, 41-44; Butler 1963a, 74-81).

The earliest socketed axe in Britain, from Wangford, Cambs. (Briscoe 1954), is a bronze skeumorph of a flanged axe with its binding. It is almost identical with an axe from Kütten-Drobitz, Saalkreis, Anhalt (von Brunn 1959, 61, Taf. 57, 2), and is probably an import from central Germany (Butler 1963a, 74). Gerloff (1975, 154-155) considers that the Wangford axe is contemporary with the Arreton industry of the late Early Bronze Age. Skeumorphic flanged axes and palstaves with sockets appeared during MI in the Nordic area but were more common during MII in Denmark and southern Sweden (Aner 1962, 167-178). There are French examples from Lignières, Indre-et-Loire, (Holste 1941) and the Seine at La Grande Paroisse, Seine-et-Marne (Joffroy 1975); the La Grande Paroisse axe bears ornament in Nordic style.

Table 7 Hoards from southern and eastern England containing imported Middle Bronze Age palstaves

	Unlooped Norman	Looped Norman	Breton	Centre- Ouest	Total
Wantage (1)	-	1	2	-	3
Crediton (5)	-	1	-	-	1
Dewlish (6)	2	2	-	-	4
Grimstone (8)	-	1	-	-	1
Grays (9)	-	-	1	-	1
Gosport (11)	-	1	1	-	2
Gable Head (12)	4	8	-	1	13
Pear Tree Green (15)	4	6	-	-	10
Swanwick (16)	-	1	-	-	1
Leavington (20)	1?	1	-	-	2?
Marshall Estate (32)	4	2	-	-	6
Blackrock (34)	3	-	-	-	3
Sidlesham (37)	-	-	3	-	3
Grunty Fen (103)	-	2	-	-	2
14 hoards	18	26=44 Norman	7	1	52

Table 8 Middle Bronze Age palstaves by county and context. After Rowlands (1976), so including a few LBA1 palstaves; estimates of the numbers in some hoards are, of necessity, arbitrary

County	Isolated	Hoard	Settlement	Total
Beds.	4	-	-	4
Berks.	23	9	-	32
Bucks.	6	21	-	24
Cambs.	111	6	-	117
Cornwall	19	7	-	26
Devon	15	12	1	28
Dorset	24	13	-	37
Essex	22	14	-	36
Gloucs.	6	-	-	6
Hants.	37	122	1	160
Isle of Wight	11	45	-	56
Herefords.	7	3	-	10
Herts.	7	1	-	8
Hunts.	14	-	-	14
Kent	44	34	-	78
Leics.	6	-	-	6
Lincs.	21	4	-	25
London	56	13	-	69
Norfolk	74	5(+ 70 miniature)	-	79

(contd.)

Table 8 (contd.)

	Isolated	Hoard	Settlement	Total
Northants.	10	-	-	10
Oxon.	16	11 (+ 10 miniature)	-	27
Rutland	1	-	-	1
Salop	20	13	-	33
Somerset	42	40	-	82
Staffs.	10	-	-	10
Suffolk	63	2	-	65
Surrey	20	-	-	20
Sussex	24	142	-	166
Warwicks.	7	-	-	7
Wilts.	33	9	-	42
Worcs.	12	-	-	12
	762	526(+80)	2	1,290

There are socketed axes in Middle Bronze Age associations from Taunton; Leopold St., Oxford; Steeple Langford; Highworth; and Bishopsland (List 14, 3-8). The axe in the Oxford hoard is large, 15.2 cm long, looped with ribbed ornament on the mouth; the others are slender with plain collar, the Highworth axe unlooped, and are not heavy-duty tools (Rowlands 1976, 41), but the loops presuppose hafting like an axe. These slender axes were recognised as alien to the British Late Bronze Age form (Hodges 1956, 33; Smith 1959, 150) and Butler christened them the 'Taunton-Hademarschen' type (1963a, 75-81). This formalised the comparison between the British axes and a small group of north German axes recognised by Sprockhoff (1941, 112, Abb. 86). These axes are largely confined to Mecklenburg and Pomerania (Schubart 1972, 50); the eponymous find is a MIII burial in Holstein (Struve 1971, Taf. 28, 9). Rowlands (1976, 41) doubts the local origin of these Nordic axes but this has been demonstrated by Aner (1962). A series of socketed axes related to contemporary Nordic palstaves appeared during later MII; this series developed the characteristics of Taunton-Hademarschen axes, angular section, slender profile, high loop (*ibid.*, 182, Abb. 6, 3). Most of these axes have a ribbed collar, like those axes derived from the north German work palstave (*ibid.*, 187-192, Abb. 9-12), though some examples have plain collars (*ibid.*, 192-194, Abb. 13-14). The double V-ornament on the British axe from Barrington can be matched on two unprovenanced axes in Danish museums (*ibid.*, 194-196, Abb. 15, 2-3). Most of the early slender Nordic axes have a round mouth rather than the rectangular mouth characteristic of Taunton-Hademarschen axes (*ibid.*, 201-204, Abb. 18), though some have a sub-rectangular mouth (*ibid.*, Abb. 15, 2). Aner's slender axes belong to the MII/MIII transition.

The Leopold Street axe may be compared to the late MII example from Jaegerspris, Frederiksborg Amt, Zealand (*ibid.*, Abb. 6, 3), rather than smaller Taunton-Hademarschen axes; it is larger than any of the socketed

axes in the Isleham hoard and cannot be closely related to these Wilburton axes, as Rowlands has claimed (1976, 43). Ribbed mouth ornament also occurs on the axe in the Bishopsland hoard.

The Holterberg axe is very similar to the Peterborough and Barrington axes and is probably a British export of Middle Bronze Age date. These axes are listed as MBA2, because of their slender profile, alongside axes in Middle Bronze Age hoards; all other axes are listed as LBA1 though precise dating is difficult.

Socketed hammers. LIST 15

The Taunton and Bishopsland hoards both contain slender socketed hammers typologically related to the axes in the same hoards (List 15, 2, 4). There is a massive hammer in the Middle Bronze Age hoard from Burgess's Meadow, Oxford, though its attribution to the hoard has been doubted because of its high lead content (List 15, 1; Rowlands 1976, 45; Burgess 1968a, 34 n. 5; Brown and Blin-Stoyle 1959, 201 nr. 17) and a hammer in the Scottish Middle Bronze Age hoard from Insoch Wood, Nairn (List 15, 3).

Massive socketed hammers are known from the Nordic area; there is an example in the MII burial from Puls, Kr. Rendsburg, Holstein (Kersten n.d. [1935], 91, 152, Taf. IX, 7; Struve 1971, 53, Taf. 17, 12). In France, socketed hammers are known in several Bronze Moyen hoards. A substantial fragment with oval section comes from the Porcieu-Amblagnieu hoard, Isère, possibly as early as Reinecke B (Nicolardot and Gaucher 1975, 9, fig. 2) and fragments of socketed hammers appear in two contemporary Tréboul hoards: Duault, Côtes-du-Nord, and Kermengouès, Finistère (Briard and Mohen 1976, 31, 34, fig. 4, 16). An early origin for socketed hammers in France is compatible with the appearance of bronze anvils.

Anvils. LIST 16

The earliest French hoard which contains an anvil is from Porcieu-Amblagnieu, Isère, probably early Bronze Moyen (Nicolardot and Gaucher 1975, 31-32) and anvils occur in the late Middle Bronze Age hoards from Insoch Wood, Nairn, and Bishopsland, Co. Roscommon (List 16, 3-4). The Irish anvil, with two tenons opposed by two projecting faces, may be compared to the French Gray type (Nicolardot and Gaucher 1975, 33-34), while the Scottish example has the square body of the Porcieu-Amblagnieu form (*ibid.*, 31-32). The Angerville anvil belongs to the latter type and the Cuiry mould, associated with pottery of Bronze Moyen, may be for such an anvil (List 16, 5-6).

The possible Middle Bronze Age associations of the St. Leonards and Flax Bourton anvils (List 16, 1-2) are both doubtful; but it seems likely that bronze anvils were employed in southern Britain during the Middle Bronze Age in conjunction with socketed hammers. Coles (1963-64, 18) and Eogan (1964, 276) both recognised that anvils of bronze were not characteristic Nordic types, citing the only diagnostic example from Vadsby, København's Amt, Zealand, originally compared by Sophus Müller (1920, 101 n. 1, fig. 9) to the example in the Porcieu-Amblagnieu hoard and recognised as an import. The combined evidence for bronze hammers and anvils suggests that they

were introduced from northern France into Britain during the Middle Bronze Age.

Knobbed sickles. LIST 17

Knobbed bronze sickles became common during the central European Middle Bronze Age. They first occurred in quantity in the Carpathian Basin during Mozsolics' Bronze IIIb Kosziderpadlás horizon (1967, 66-68, Typus C) in hoards such as Kosziderpadlás II and Uzd, in which sickles with round, elongated and double knobs are associated (*ibid.*, Taf. 49; 54-55). To the west sickles are known from the broadly contemporary Reinecke B period. The transitional Reinecke A2/B hoard from Buhl, Kr. Nordlingen, Bavaria (Dehn 1952; Abels 1972, 62), contains fragments of sickles with one or two knobs and one or two ribs. The find from Homberg-Ackenbach, Lndkr. Überlingen, Baden (Kimmig 1955), also contains fragments with double and single knobs with Reinecke B axes, but the original contents of this hoard are uncertain (Abels 1972, 62). In Switzerland, the hoard from Vouvry, Valais, contains single-knobbed sickles with one and two ribs alongside a Cressier axe of Reinecke B (*ibid.*, 52 nr. 354, 55, Taf. 67A). Sickles of the later Swiss Middle Bronze Age usually have two ribs and are more curved than earlier examples (Osterwalder 1971, 36). Knobs are usually single, cf. the example in the Meikirch hoard (101).

Knobbed sickles are often said to appear in south-eastern France only at the end of Bronze Moyen (Millotte 1963, 138; Nicolardot and Gaucher 1975, 94). The hoard from Porcieu-Amblagnieu, Isère, contains three sickles with elongated knobs and double ribs and a fourth with a single round knob and single rib (Audouze and Courtois 1970, pl. 28, 13-16). This hoard has often been dated to the end of Bronze Moyen (Kimmig 1951, 81; Sandars 1957, 114; Bocquet 1969, 160, 301-303 no. 86, fig. 78; 1976, 485; Osterwalder 1971, 36) but Jockenhövel (1971, 35) and Abels (1972, 56) have placed it in Reinecke C1 and Abels' study of the axes suggests that this early date is more likely. Further north in France, sickles appear to be unknown before the transitional Bronze Moyen III/Bronze Final I hoards such as Malassis, Cher (Briard, Cordier and Gaucher 1969, 51, fig. 11, 81-90), with single knob, round or elongated, and one, two or three ribs. Some sickles with elongated knobs have been found with Haguenau palstaves of late Bronze Moyen (Nicolardot and Gaucher 1975, 94).

Knobbed sickles appeared in northern Europe during MII. A find from Erfurt, Thuringia, contains a sickle with a slightly curved profile, double rib and an elongated knob (von Brunn 1968, 26-27, 318 no. 61, Taf. 64, 1). In north-western Germany, Bergmann (1970, Teil B, 47, Liste 156, Taf. 7, 22-24, Karte 63) distinguishes three groups of knobbed sickles, all single-knobbed: a) slightly curved, with single or double rib, b) more curved, with single or double rib or no rib, c) strongly curved, with double rib; all are dated to MII. Knobbed sickles were more common in southern Scandinavia during MII than during MIII (Kersten n.d. [1935], 91); they were also known during MIV and MV (Baudou 1960, 45).

British Middle Bronze Age finds of knobbed sickles are concentrated in Somerset hoards (List 17, 1-4); most examples have double or elongated

knobs. Double-knobbed sickles are rare elsewhere after the early Tumulus period; this may be considered as a British type with the Dutch examples (List 17, 6, 8) probably British exports. Sickles with elongated knobs in Britain and Ireland could have been derived from the French examples, assuming that these were in common use in northern France before the end of Bronze Moyen. The north German finds appear to have chronological priority but sickles with elongated knobs appear to be absent. It is thus difficult to establish a specific continental origin for British bronze sickles.

The single-knobbed sickles in the LBA1 Veenenburg hoard (List 17, 7) should be of continental origin.

Tréboul spearheads. LIST 18. MAP 11

The spearheads of the Tréboul phase in Brittany have leaf-shaped blades, often ornamented, peg-holes and many are characterised by the termination of the socket some distance short of the point of the blade. The eponymous hoard contains about twenty spearheads (Briard 1965, 86, fig. 25). Tréboul spearheads are found through north-eastern France and Belgium to the northern Netherlands (List 18), reflecting the similar distribution of contemporary Tréboul-Saint-Brandan and Plougrescant-Ommerschans swords (Butler and Sarfatij 1970-71, 308; Lists 23-24).

Tréboul spearheads appear to be absent from the British Isles. Certain socket-looped spearheads with kite-shaped blades from Britain and Ireland have sockets ending low down the blade and outlined by convergent ribs (Eogan 1964, 268, fig. 1, 1; Harbison 1973, 120, fig. 13, 1; Coles 1963, 64, 104, fig. 9, 5, 11-12; Rowlands 1976, 50-51, pl. 37, 1412, 1409). The short socket and ornament may be related to the Tréboul form. Short sockets also occur on some British socket-looped spearheads with leaf-shaped blades (*ibid.*, pl. 37, 1321, 1314, 1291). The pegged spearhead from Cookham, Berks. (Ehrenberg 1977, 14, 34 no. 34, fig. 22), has a short socket but its broad leaf-shaped blade is not characteristic of the Tréboul form.

Side-looped spearheads. LIST 19. MAP 12

Spearheads of the British Middle Bronze Age have loops on the socket or at the base of the blade; hoard associations exist only for MBA 2 (Burgess 1974, 201 n. 227, 203; Smith 1959, 178-180; Rowlands 1976, 49-63; Ehrenberg 1977, 6-12). The 'end-looped' spearheads of the Early Bronze Age were common only in the highland zone (Burgess and Cowen 1972, 172, fig. 6, 4) and the basal-looped spearhead with straight-based blade did not appear until LBA1 (Burgess 1968a, 35 n. 8).

Several authors have discussed British looped spearheads from the continent: Butler (1963a, 98-105) for northern Europe; Briard (1963), Cordier (1965) and Blanchet (1973, 49-50) for France; classification and extensive lists are included by Jacob-Friesen (1967, 203-219).

The only side-looped spearhead from northern Europe was found at Scowarcz (Schonwarling), Prov. Gdańsk, Poland; association with flanged axes has been claimed but this is doubtful (Butler 1963a, 103-104; Jacob-Friesen 1967, 216). The distribution of side-looped spearheads in France

is exclusively northern (Blanchet 1973, 48, fig. 4) with a concentration around Paris (List 19, 6-8). None of the examples from north-eastern France is from an associated find but there is a socket fragment in the Tréboul hoard from Duault, Côtes-du-Nord (Briard and Mohen 1976, 31, 34, fig. 4, 8), and the spearhead from Caen, Calvados, may have belonged to a contemporary hoard (Edeine 1961, 677; Verron 1976a, 588; Briard 1965, 104). This suggests that side-looped spearheads were known in Britain during MBA1.

The distribution of side-looped spearheads in Britain is concentrated in the Thames valley with smaller centres in Wessex and East Anglia (Map 12). There is little distinction in distribution between Rowlands' two groups (1976, 52-54). Most continental examples which can be placed in one of these groups belong to Group 1, with flat oval or lozenge loops. The British dating is evidence is exclusively for Group 2 spearheads (*ibid.*, 54-55), so the appearance of a Group 1 spearhead in the Duault hoard seems to confirm Rowlands' suggestion that this group was earlier (*ibid.*, 55).

Basal-looped spearheads with leaf-shaped blades. LIST 20. MAP 13

Basal-looped spearheads with leaf-shaped blades are only attested in MBA2 hoards from southern Britain (Burgess 1974, 201, n. 227; Rowlands 1976, 59; Ehrenberg 1977, 10). Continental finds are more widespread and numerous than those of side-looped spearheads. There are several datable finds, the earliest of which is from Liesbüttel, Kr. Rendsburg, Holstein (Butler 1963a, 98, pl. XIIIc; Jacob-Friesen 1967, 331 nr. 741), dated by a MII sword (Ottenjann 1969, 35, 87 no. 92, Taf. 14; 74). There is a burnt and fragmentary basal-looped spearhead in a Reinecke D burial from Wiesloch, Kr. Heidelberg, Baden-Württemberg (Schauer 1971, 62 no. 189, 72, Taf. 131C), but I wonder how certain is the identification of this spearhead as leaf-shaped rather than straight-based. A leaf-shaped spearhead with its point broken off is in the hoard from Grammond, Loire (Cordier 1965, fig. 5, 24; Jacob-Friesen 1967, 378 no. 1703); this hoard has not been published in detail (Millotte 1959, 146, fig. 3) but appears to belong to Bronze Moyen (Daugas 1976, 509). The spearhead in the Late Bronze Age hoard from the R. Sil at San Esteban, Orense, north-western Spain (Jacob-Friesen 1967, 375 no. 1646; Inv. Arch. E3, 4; Savory 1968, 225, fig. 74, f) has pointillé ornament on the blade and grooves at the base of the socket. None of these continental finds suggest that leaf-shaped basal-looped spearheads need have appeared in Britain before MBA 2.

Isolated finds are known on the continent from: Aasbüttel, Kr. Rendsburg, Holstein (Jacob-Friesen 1967, 330 nr. 728), Obergrünhagen, Kr. Fallingb., Lower Saxony (*ibid.*, 338 no. 871), Pinnacle Roc, Jersey (*ibid.*, 375 no. 1647), 'Calvados' (*ibid.*, 376 no. 1665), Mâcon, Saône-et-Loire (*ibid.*, 378 no. 1701), Bernage-en-Saint-Vaury, Creuse (*ibid.*, 378 no. 1702), Heimiswil, Bern (*ibid.*, 381 no. 1753). The continental distribution is concentrated in the lower Seine valley (Map 13) and it is possible that leaf-shaped basal-looped spearheads were produced in this area, though positive identification of the Gonfreville-l'Orcher mould (List 20, 15) would be needed to confirm this. The British distribution of these spearheads resembles that of side-looped spearheads, concentrated in the Thames valley, with other centres in Wessex and East Anglia (Map 13).

Ogival-bladed spearheads. LIST 21. MAP 14

Two hoards of Bronze Moyen III in north-eastern France contain pegged spearheads with ogival-blades: Baux-Sainte-Croix and Sucy-en-Brie (List 21, 2, 8). This form appears in the Rosnoën hoard of Bronze Final I (Briard 1965, 157, 171, fig. 51) but these two hoards should indicate an earlier origin. Spearheads with ogival blades and ribbed sockets occur among the Valsømagle type of late MI (Jacob-Friesen 1967, 116-136; Lomborg 1968, 104-105, fig. 2, 5) and ogival-bladed spearheads are also known from the later part of the Late Bronze Age (Burgess, Coombs and Davies 1972, 215; Heerde hoard (206)). Ogival-bladed spearheads are common in north-eastern France and in Belgium, especially in the lower Scheldt valley (Map 14).

Blanchet and Lambot (1975, 37) dated the two Oise examples (List 21, 3-4) to Bronze Final I because of their long sockets. Jacob-Friesen (1967, 134) regarded the Eksel spearhead (List 21, 16) as Late Bronze Age when comparing it with the Valsømagle spearhead from De Zilk (List 22, 3). Tackenberg dates both examples to the Late Bronze Age (1974, 102-103) without citing any specific dating evidence. Desittere and Weissenborn (1977, 29) compare the Wichelen and Armancourt examples (List 21, 3, 14) to the Heerde spearhead and the Tournai, Vurste, Temse, Geraardsbergen, Eksel and Compiègne examples (List 21, 4, 9, 11, 12, 15, 16) to De Zilk and other Nordic examples (*ibid.*, 30). They appear to have confused the long spearhead from Armancourt with the short example from Compiègne (*ibid.*, 29 n. 17, 30 n. 18).

The more slender examples: Baux-Sainte-Croix, Armancourt, Sucy-en-Brie, Orsett (List 21, 2-3, 8, 17) should be of Bronze Moyen III origin because of the French hoards; this does not contradict the early LBA1 date for the Orsett hoard. The Compiègne example, with its blade more lozenge-shaped (List 21, 4) could be as late as the Heerde hoard but could certainly be as early as Bronze Final I and be of Rosnoën origin. The examples with broader, more curved blades: Morsang-Saintry, Chaussoy, Temse, Eksel (List 21, 1, 7, 11, 16) may be compared with the spearhead from Chelles, Seine-et-Marne (Mohen 1968, 791, B82, pls. VII, IX). This has the same curved blade and broad socket mouth but also bears ornament; two bands of zig-zags separated by a band of lines on the socket and lines of pointillé flanking the socket on the blade. Similar motifs appear on Nordic Bagterp spearheads (Jacob-Friesen 1967, 92, Taf. 1, 1-5) probably derived from Reinecke A south German ornament (*ibid.*, 85, Taf. 23, 5) so a Middle, or even Early, Bronze Age date cannot be excluded for the Chelles spearhead. It seems probable that pegged ogival-bladed spearheads were being produced in north-eastern France and in Belgium during the Middle Bronze Age.

Nordic and central European spearheads. LIST 22. MAP 14

Bagterp spearheads stand at the head of the Nordic sequence (Jacob-Friesen 1967, 89-104). This is a heterogeneous type and sub-divisions have been made by Becker (1967). The plain spearhead from Blerick (List 22, 1) probably belongs to the Stubdrup variant of the Bagterp type, that is without ribs on the socket (*ibid.*, 221). The decorated example in the Overloon hoard (List 22, 2) probably belongs to the Nordborg variant of Becker's Torsted type, longer than his Bagterp type (*ibid.*, 221-222). The late MI date of these spearheads (*ibid.*, 222) is in accordance with the date of the Overloon hoard.

The Nordic sequence continues with Valsømagle spearheads of late MI and Smørumovre spearheads of early MII (Jacob-Friesen 1967, 117-136; Lomborg 1968, 104-105, fig. 2, 5, 112-113, fig. 7, 5). There is a single example of each from the Netherlands, De Zilk and Nijmegen (List 22, 3-4). These are Scandinavian rather than north-west German types (Jacob-Friesen 1967, Karte 1-2).

The north-west German spearhead in the Overloon hoard (List 22, 8) is probably from a part of Germany adjacent to the Netherlands. The Hulterstad and Lüneburg spearheads (List 22, 5-7) are from further east in the Ilmenau area (*ibid.*, Karte 6, 8). The Hulterstad spearhead from the Weerdinger Veen is an uncharacteristic example (*ibid.*, 159); it appears to belong to Laux's Beverdeck-Tangendorf form of the later part of his Zeitgruppe III (1971, 87-88). The Lüneburg Type II belongs mainly to MIII according to Jacob-Friesen (1967, 184-190); Laux places most examples in his Zeitgruppe III (1971, 86).

The earliest spearheads of central European origin are those from De Zilk and Dale (List 22, 10-11) of Reinecke A2 or B (Butler 1963c, 245; Jacob-Friesen 1967, 108). Butler considers that the Ageler Broek spearhead (List 22, 12) is contemporary (Inv. Arch. NL13) though Jacob-Friesen gives it a Late Bronze Age date (1967, 264; see p. 140). Blanchet and Lambot (1975, 36) place the Janville example early in Bronze Final by virtue of its ornament though Jacob-Friesen (1967, 114 n. 55, 125 n. 33) compares it and a spearhead from Dépt. Meuse (*ibid.*, 377 no. 1688, Taf. 22, 5) to a small group of south German decorated spearheads of Reinecke B or C1.

The Netherlands seem to represent the western margin of the distribution of Nordic spearheads of the earlier Bronze Age (Map 14). The earlier Nordic spearheads should be broadly contemporary with Dutch finds of Tréboul spearheads and the later types considered here contemporary with basal-looped spearheads.

Tréboul-Saint-Brandan swords. LIST 23

Tréboul-Saint-Brandan swords have been discussed by Briard (1965, 88-91, 91, fig. 34); Gaucher and Mohen (1972, 211) and Schauer (1972c). Rowlands mentions some related British finds. Tréboul-Saint-Brandan weapons have a broad butt with as many as six rivet-holes usually flanked by two notches. The blade tapers abruptly below the hilt. The narrow blade has a midrib flanked by multiple grooves; about two-thirds of the way down the blade the grooves converge and the midrib narrows abruptly, continuing to the tip of the blade. Solid hilts occur often, with drooping shoulders and a central notch in the base; there are three or four holes or false rivets in the grip; the pommel is expanded. Where no hilt survives a hilt-mark shows its characteristic form.

These swords are most common in Brittany where they are characteristic of the Tréboul phase (Schauer 1972c, Abb. 3). Only two other examples appear to be known in France, one from the Rhône at Lyon, Rhône (Schauer 1972c, 20 no. 16; Holste 1942, Abb. 3; Briard 1965, fig. 33, 2), the other from Villeneuve-Saint-Georges (List 23, 1). From the Low Countries are the examples from Mechelen and the R. Waal (List 23, 2-3). There is one

German find from the Main at Frankfurt-Höchst (Schauer 1972c, 16, Abb. 1, 1) and a much-corroded blade from Østerhoved Mose, Ringkøbing Amt, Jutland (*ibid.*, 20 no. 24; Broholm 1935, 257-258, fig. 1).

Schauer (1972c, 20 nos. 18-19) cites two English examples but both appear to be local daggers: Battlegore, Williton, Somerset (Gerloff 1975, 107 no. 197), Camerton type, and Methwold, Norfolk (*ibid.*, 81 no. 149), Roke Down type. The same applies to the Irish find, unprovenanced (Schauer 1972c, 20 no. 20), a dagger of Hill of Allen type (Harbison 1969, 14 no. 78). Of Schauer's related weapons, the example in the hoard from Glentrool, Kirkcudbright. (1972c, 20 no. 33; Coles 1963-64, fig. 16), is very corroded; on examination in the National Museum of Antiquities, Edinburgh, in February 1976, it was impossible to assign it with confidence to any specific type.

Schauer dates the appearance of Tréboul-Saint-Brandan swords to Reinecke B (1972c, 29). Weapons of similar form, his Broc type, were known in central Europe during Reinecke A2 (Schauer 1971, 19-20). Solid bronze hilts occurred on Reinecke A2 daggers in west central Europe, e.g. Gaubickelheim, Kr. Worms-Alzey, Hesse (Hundt 1971, Abb. 1, 1-3, Taf. 1, 1; Schauer 1971, Abb. 2); these had straight hilts and triangular blades. The triple U-shaped hilt appeared in Reinecke B (Hundt 1962, 51; Gerloff 1975, 154) in the upper Rhine valley and eastern France (Hundt 1962, 57), and solid-hilted swords with drooping shoulders and triple U-shaped hilts were known at this time (Holste 1942; 1953a, 2-3; Müller-Karpe 1955, 26). X-ray examination shows that some of these swords had trapezoidal hilts (Hundt 1962, 52-54, Abb. 4, 1-4) while later swords of Reinecke C/D had tanged hilts (*ibid.*, Abb. 2, 2-5). The grooved ogival blade of Tréboul-Saint-Brandan swords should, like that of Sögel swords, be derived from the Hajdúsámson-Apa group (Schauer 1972c, 25; Hundt 1962, 41-50).

The appearance of ogival blades in Brittany should be broadly contemporary with the appearance of ogival dagger blades, the Camerton-Snowhill type, in Britain (Gerloff 1975, 115-118). A small number of British daggers, the Roke Down group, is closely related to Tréboul-Saint-Brandan swords (*ibid.*, 1975, 81-82). The example from Methwold, Norfolk (*ibid.*, no. 149; see p. above), appears to be a small version of the French type with a broad butt bearing four large rivet holes flanked by two notches and a broad, tapering mid-rib flanked by converging grooves. The eponymous example (*ibid.*, no. 152) had an organic hilt of triple U-shape with drooping shoulders. Such daggers are rare in Brittany and absent from primary series barrows but they occur in secondary series barrows, e.g. Kersaint-Plabennec, Finistère (Briard 1976a, 567; Gerloff 1975, 84, 249 no. 39), and are probably intermediate between Armorico-British A and B daggers and Tréboul swords (*ibid.*, 88). The Roke Down group need be no earlier than the Tréboul swords. Tréboul influence has also been invoked for the Irish Hill of Allen type (Harbison 1969, 26) which includes the example identified as Tréboul-Saint-Brandan by Schauer.

The hoard from La Vicomté-sur-Rance, Côtes-du-Nord, contains a Wohlde sword as well as a Tréboul sword (Schauer 1972c, 23; Briard 1965, fig. 26, 9). This correlates Tréboul swords with late MI and confirms their Reinecke B date. Butler accepts a Reinecke B date for the appearance of

Tréboul swords but questions Schauer's assumption that their production ended during Reinecke C1 (Butler and Sarfatij 1970-71, 309 n. 1).

The sword in the Bailleul-sur-Thérain hoard (54) is related to the Tréboul-Saint-Brandan type by its blade and the three false rivets in its grip (Blanchet and Lambot 1975, 57). The dagger from La Folie, Pierrefonds, Oise, has a solid hilt of similar configuration (*ibid.*, 57, fig. 60) and its decorated blade may be compared to a dagger from Hammersmith (Gerloff 1975, 132 no. 215). This dagger belongs to the Hammersmith type which includes the only known British dagger with a solid bronze hilt, from the Thames (*ibid.*, no. 218). The Hammersmith type should be contemporary with the Bailleul and Pierrefonds weapons; the Bailleul hoard (54) includes flanged axes closely related to the Arreton type (List 1, 4) and the Hammersmith type belongs to the Arreton series of daggers (*ibid.*, 128-130). Gerloff has suggested that the casting technique of Arreton socketed spearheads was derived from that of Reinecke B solid-hilted swords; the spearheads are also related to these swords by the mock rivets which both types share and which occur on the Bailleul sword (*ibid.*, 152-154).

This all suggests that the Arreton phase of the British Early Bronze Age was, at least in part, contemporary with early Bronze Moyen in northern France and, thus, with Reinecke B and late MI.

Various derivatives of Tréboul-Saint-Brandan swords are known in France, e.g. Seine at Oissel, Seine-Maritime (Coutil 1928, pl. IX², upper left; Schauer 1972c, 20 no. 30; Briard 1965, 103), and in southern England, e.g. Norton Fitzwarren, Somerset (Trump 1962, 81, 98 no. 233, fig. 2, 2; Rowlands 1976, 417 no. 1884, pl. 43), and Thames at Surbiton, Surrey (Trump 1962, 99 no. 257, 102; Rowlands 1976, 197, 412 no. 1816, pl. 44). More details of the French derivatives are needed to decide whether the English finds are imports or not. Burgess (1968c, 8, n. 20; Rowlands 1976, 197) refers to two unprovenanced daggers from the Layton collection as Tréboul weapons. One is included by Gerloff in her Roke Down group (1975, 81 no. 150) and the other is an Armorico-British C dagger of her Winterbourne Came variant (*ibid.*, 80 no. 146).

Plougrescant-Ommerschans swords. LIST 24

A group of unusual weapons has been named the Plougrescant-Ommerschans type (Butler and Bakker 1961; Butler and Sarfatij 1970-71). These swords have a broad, trapezoidal hilt with a curved top; rivet holes are always absent. The blade is ogival with bevelled edges which rise above the inset face of the blade; a broad midrib tapers to a point a little more than halfway down the blade; the midrib is flanked by broad, flat, well-defined ribs which follow the curves of the edges from the sides of hilt and converge immediately below the point of the midrib. From the tip of the convergent ribs to the point of the blade runs a narrow midrib. The swords appear to have been designed to consistent or related measurements and executed with great care but their edges appear to be unsharpened. This, combined with the lack of rivet holes, suggests that Plougrescant-Ommerschans swords were non-functional, a supposition confirmed by their quite unwieldy dimensions, e.g. the example from Beaune, Côte-d'Or (BM WG 2257; Fig. 30, 1).

A peculiar feature of the Beaune sword and the example from Kimberley (List 24, 1) is the presence of a ricasso (Butler and Bakker 1961, 204), a feature apparently absent before Reinecke D (Schauer 1971, 70 n. 2). Otherwise, the features of Plougrescant-Ommerschans swords can all be derived from Tréboul-Saint-Brandan swords (Butler and Sarfatij 1970-71, 308; Schauer 1972c, 29). Thus, their chronology could span the period from the Tréboul/Reinecke B phase to Reinecke D; the only associated find, the Ommerschans hoard (86), is not very informative.

The swords from Ommerschans and Plougrescant, Côtes-du-Nord, are almost identical (Butler and Bakker 1961, 201, fig. 5), and of similar dimensions to the Beaune sword. The Jutphaas sword (List 24, 3) is smaller but designed approximately in proportion to the Plougrescant and Ommerschans swords (Butler and Sarfatij 1970-71, 308). The Kimberley sword is simpler, lacking the flat ribs on the face. The distribution of Plougrescant-Ommerschans swords reflects the same link between Brittany and the Netherlands as Tréboul swords and spearheads. If an Armorican origin is accepted (*ibid.*), the Kimberley sword should represent an import into Britain unusual for the Tréboul phase, but less so if the ricasso indicates a later date.

Nordic and central European swords. LISTS 25-26. MAP 15

Characteristic weapons of the north-west German Early Bronze Age were Sögel and Wohlde swords. The Sögel type has four rivet-holes in a rounded butt and an ogival blade, often decorated (Sprockhoff 1927); the Wohlde type has a more trapezoidal butt and a straight blade, its four rivets, so-called Pflockniete, usually have large heads (Inv. Arch. D153). The Sögel form was derived from the Middle Danube and the Wohlde form from the south German early Tumulus region (Hachmann 1957, 81-111, 153-154; Kubach 1973b, 106-107); most writers consider that the two types were broadly contemporary in north-western Germany (Lomborg 1959, 137-139; contemporary in north-western Germany (Lomborg 1959, 137-139; Jacob-Friesen 1967, 26-27; Laux 1971, 99-101; Kubach 1973b, 407) and did not represent two separate horizons as Hachmann proposed (1957, 36-39). Sögel and Wohlde swords occur in Jutland, Schleswig-Holstein, Lower Saxony and south to the Main (Hachmann 1957, Karte 1-2; Lomborg 1968, 132-133, fig. 1; Bergmann 1970, Teil B, Liste 18, 22, Taf. 2, 1, 4, Karte 8-9; Laux 1971, Karte 15; Kubach 1973b, Abb. 4). Wohlde swords appear to be absent from western Lower Saxony (Bergmann 1970, Teil B, Karte 9), so it is somewhat strange that Wohlde swords are more common than Sögel in the Netherlands and Belgium (Map 16). Two swords from Breton Tréboul hoards have often been identified as Wohlde swords: La Vicomté-sur-Rance (Briard 1965, 94, fig. 26, 9) and Duault (Briard and Mohen 1976, 31, fig. 3, 15), Côtes-du-Nord, but Schauer points out that these swords could be derived directly from central Europe (1972c, 23 n. 31) and the same may apply to some of the 'Wohlde' swords from the Low Countries.

Two swords from the Paris Basin are probably related to the Saint-Triphon type of Reinecke B (Schauer 1971, 33-35): Canes-Écluse, Seine-et-Marne (Bontillot and Mordant 1972, 25-27, fig. 2, 1), and R. Yonne at Pont Baudot, Sens, Yonne (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 148, fig. 3, 18); a second sword from the Yonne, Passage des Pêcheurs, Sens (*ibid.*, 147,

fig. 3, 17), may have similar central European origins. Less distinctive swords with rounded butts occur in north-eastern France (Gaucher and Mohen 1972, 21) e.g. Boulogne, Pas-de-Calais (Mohen 1972, 449, fig. 3, 6; Gaucher and Mohen 1974, 111, Boulogne-sur-Mer 12), and Schoulbrouck, Clairmarais, Pas-de-Calais (Mohen 1972, 449, fig. 2, 1; Gaucher and Mohen 1974, 112, Clairmarais). The halberd from Montreuil-sur-Mer, Pas-de-Calais (Gaucher and Mohen 1974, 29, ill. 12a), previously published as a round-butted sword (Mohen 1972, 451, fig. 3, 5), may be mentioned here. Similar confusion has attended the related object in a Reinecke A2 hoard from Ried im Oberinntal, Tirol, Austria (Ó'Riordáin 1936, 223), published by Schauer as a Schwertstab (1971, 60-61). Both the Ried and Montreuil halberds appear to be outliers of a north German-west Polish group of halberds with large conical rivets (Meier-Arendt 1969, Abb. 4) and the French example may be compared to the unprovenanced example in Cologne (ibid., 53, Abb. 1-2, Taf. 11-12).

Weapons with rounded butts are rare in Britain. Trump (1962, 80-82) discussed them and, rather unconvincingly, compared the 'dirk' from the Thames at Ditton, Surrey (ibid., 96 no. 90, fig. 1, 1; Rowlands 1976, 408 no. 1749), to a Saint-Triphon sword from Amberg, Bavaria (Schauer 1971, 33 no. 48). Burgess attributed a rounded butt to Tréboul influence (1968c, 8; see p. 126-30). Rowlands (1976, 198-200, pls. 42-43) has listed and illustrated blades which he considers of continental origin or inspiration. Sprockhoff (1941, 41) considered that the rapier from the Thames at Chatham Dockyard had *Sögel* characteristics but it lacks both decoration and a constricted upper blade. Nor can any other of these rapiers be matched among the Nordic series as illustrated by Hachmann (1957), most have butts too broad and flat. None appears to be of central European origin (Schauer 1971). Tréboul influence appears more probable. The remaining rapiers mentioned as *Sögel* or Wohlde derivatives by Butler (1963a, 214 n. 1) are placed in insular groups by Rowlands (1976, 402 no. 1683; 408 no. 1749; 420 no. 1919; 421 nos. 1925, 1933).

There is a Dutch example of this rather undiagnostic group of round-butted weapons from Zwaagdijk, N. Holland (Butler 1964a). This has six rivets and a lozenge blade section with offset edges. This resembles an example from Barrow 10, Wolfhagen-Stadtwald, Hesse (Schauer 1971, 59 no. 174), not included in any of Schauer's types but listed as a north-west German MII form by Bergmann (1970, Teil B, 35, Liste 69, 11, Taf. 43, Karte 28).

Two finds of genuinely Nordic objects in north-eastern France may be noted. There is a solid-hilted sword from the Seine at Vernon, Eure (Coutil 1921, pl. 5, top; Verron 1976a, 590). Lack of detail prevents a certain attribution, but the Vernon sword has six rivets, an unusual number, in its omega-shaped hilt. Several swords of Ottenjann's Type M have six rivets (1969, Taf. 39, 303; 40, 308, 310, 311) and the example most similar to the French sword comes from a burial at Serup, Thisted Amt, Jutland (ibid., 99 no. 303, Taf. 39; 60). This group of Nordic swords is dated to MII (ibid., 55-58). The Vernon sword is complemented by a Nordic chape from Fort-Harrouard, Eure-et-Loir (Phillippe 1936, fig. 28, 8). This appears to belong to Form 1 of Kersten's bossed chapes (n.d. (1935), 70, 139, Taf. XXXVI, 35). These are found in Denmark and north-western Germany during MII (Laux 1971, 77); the most diagnostic find is in the Ullerslev hoard, Svendborg Amt, Fyn (Jacob-Friesen 1967, 143, 316 no. 458, Taf. 69, 5).

Tumulus daggers. LIST 27. MAP 15.

A small group of daggers known in north-eastern France (List 27, 9-16) probably originates from the western Tumulus area (Sandars 1957, 101, 113). Such daggers are especially common in the Haguenau Forest (Schaeffer 1926, figs. 66-67). The Abbeville dagger (List 27, 11) finds a parallel in barrow 12, Königsbruck, nr. Soufflenheim, Bas-Rhin (ibid., fig. 36, f); this belongs to Zeigert's Zeitgruppe 5, Reinecke C2 (1963, Taf. 6). The longer blade from the Seine at Paris (List 27, 10) also appears to be of Haguenau origin, cf. the example from barrow 2, Schelmenhofstadt, Bas-Rhin (Schaeffer 1926, 11, figs. 3, m; 67c). It is interesting to see so many of these daggers at Fort-Harrouard, together with pins of Haguenau origin (see p. 75-6).

Of the British daggers, the example from Wroxeter is of south German Reinecke B origin (List 27, 2). The Sussex dagger (List 27, 3) belongs to the Peschiera type, usually said to belong to Reinecke D and Ha A1 (Peroni 1956, 75; Müller-Karpe 1959, 144, Abb. 23, 22; von Brunn 1968, 34; Randsborg 1970, 191); this dagger appears closest to the Verona type of Peroni's Group C (1956, 71 no. 10, Taf. 1, 3). A dagger of Group C was found in barrow 1, Donauber, Haguenau (ibid., 75, 85 no. 85; Schaeffer 1926, fig. 30, A), dated to Zeitgruppe 5, Reinecke C, by Ziegert (1963, 14, Taf. 6) and Müller-Karpe has suggested that the Peschiera horizon may extend back into the Tumulus period (1959, 150). The Lagore dagger (List 27, 8) is related to early Urn-field daggers, but also to late Tumulus razors. There is a similar dagger in a burial at Fahrenkrug, Kr. Segeberg, Holstein (Randsborg 1968, Abb. 2), for which Eogan quotes a late MII date (1966a, 152), while Randsborg prefers a slightly earlier date (1968, 10). The Cypriot origin of the Winterbourne Basset dagger renders modern import probable (List 27, 4; Watkins 1976). The precise origins of the other British daggers are uncertain. The Belgian example (List 27, 17) is probably of western Tumulus origin; other examples from the Low Countries probably await identification.

Trapezoidal-hilted rapiers. LISTS 28-29. MAP 16.

The so-called 'rapiers' of the British Middle Bronze Age have more or less trapezoidal hilts with two rivet holes; below the hilt the blade narrows abruptly and either has parallel sides for most of its length or sides which converge gradually to its tip. The typology of Trump (1962) has not been widely accepted; the classification of Burgess (1968c), based on blade section, is usually employed. The chronology and typology of British rapiers has also been discussed by Rowlands (1976, 68-74) and by Coles (1963-64, 111-114).

Burgess has identified four groups of blade sections: Group I, ribbed and grooved; Group II, lozenge section, slightly concave, with or without bevelled edges; Group III, triple ridge; Group IV, broad midrib (1968c, fig. 1). Weapons of Group IV can have notched butts; this is characteristic of LBA1 (Burgess 1974, 205 n. 261) in Britain and Bronze Final 1 in northern France (Blanchet and Mohen 1977, 477-478). The hoard from Orsett, Essex (105), shows the variety of rapiers available at the MBA2/LBA1 transition. It should be noted that the mould from Knighton Down, Devon (List 42, 2), contains matrices which are probably for ribbed bracelets in addition to matrices for Group II rapiers (Burgess 1968c, 11, 26 no. 4). This supports a MBA2 date for these rapiers.

Trapezoidal-hilted rapiers are common on the continent (Map 16) especially in northern France (Gaucher and Mohen 1972, 22) though there is no classification of French rapiers such as that of Burgess. French rapiers are generally considered to be characteristic of later Bronze Moyen, in succession to Tréboul swords (Briard 1965, 298, chronological table; Schauer 1972c, 29, Tabelle 1).

Group I rapiers are related typologically to Tréboul swords and developed Early Bronze Age daggers (Burgess 1968c, 7-10); there is a dearth of useful hoard associations and further detailed study will be necessary to unravel the complex relations between these three groups of weapons. We may agree with Burgess' MBA1 date (*ibid.*, 10). I know of no certain example of a Group I rapier from north-eastern France or the Low Countries, but there is an example from Westerwanna, Kr. Hadeln, Lower Saxony (Butler 1963a, 113, fig. 32, 1).

Lozenge-section rapiers of Group II occur in Tréboul hoards at La Vicomté-sur-Rance, Côtes-du-Nord (Briard 1965, fig. 26, 1), and Duault, Côtes-du-Nord (Briard and Mohen 1976, 31, fig. 3, 1). The lozenge-section weapon in the Cascina Ranza hoard, Milano (Bianco Peroni 1970, 14 no. 12), is usually identified as a trapezoidal-hilted rapier (Burgess 1968c, 11-12; Schauer 1974b, 27). The other trapezoidal-hilted weapon from Italy, Pogrile di Monticelli, Parma (Bianco Peroni 1970, 14 no. 11), is a central European Gamprin sword of Reinecke B (Schauer 1974b, 27 n. 11). The Cascina Ranza rapier is in poor condition and, if it is really of Atlantic origin, it only indicates a middle Tumulus date later than the Reinecke B-Tréboul phase (see (89)). Burgess invokes Wohlde influence for the form of group II blades as well as for the trapezoidal hilt, but both features could be derived from central European Lochham weapons via Tréboul hoards if the La Vicomté-sur-Rance 'Wohlde' sword were really central European (Schauer 1972c, 23 n. 31). Two rapiers from north-eastern France may be assigned to Group II (List 28, 6, 13) but these may be related to the similar rapiers in Tréboul hoards.

Group III rapiers represent the zenith of British and Irish rapier manufacture. The identification of the looped palstave in the Crediton hoard (5) as Norman removes Burgess' doubts about the date of this hoard; it is securely MBA2 (1968c, 13). The two rapiers in the Mont-Saint-Aignan hoard (61) have lozenge sections with offset edges, not triple arris sections as Burgess claims (*ibid.*). Triple arris blades occur in the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969, fig. 10, 44-45, tableau II), in a transitional Bronze Moyen/Bronze Final context. Several Group III rapiers are known from north-eastern France (List 28, 30, 32). There are examples from Olixdorf, Kr. Steinburg, Schleswig (Butler 1963a, fig. 32, 3), and Wesel, Kr. Rees, Rhineland (Ankel 1974, 46-47, Taf. I, 1, Abb. 1, 3-4).

The appearance of Group IV weapons with enclosed rivet-holes during MBA2 is indicated by the Crediton hoard (5) as well as by the rapier hoards from Beddgelert, Caerns., Swaffham, Norfolk, and Talaton, Devon (Burgess 1968c, 14, 24 nos. 2, 5, 6; Rowlands 1976, 230 no. 27, pl. 22; 252 no. 99, pl. 24). One example in the Malassis hoard may belong to this form (Briard, Cordier and Gaucher 1969, fig. 10, 43). There are examples from north-eastern France (List 28, 4, 7, 9-10, 14-15, 17), Ruschwedel, Kr. Stade,

Lower Saxony (Butler 1963a, fig. 32, 2) and, with questionable provenance, from the Murtensee, Vaud/Fribourg, Switzerland (Schauer 1971, 59 no. 178).

One form found on the continent which does not appear to fall into any of Burgess' groups is the blade with a narrow midrib and bevelled edges (List 28, 2, 19, 31); this does not appear to be a characteristic British form. The lozenge section with offset or bevelled edges appears to have been incorporated into Group III. As Schauer has pointed out in connection with the Mont-Saint-Aignan hoard (1972c, 24 n. 37) this form is common on early and middle Tumulus swords (see p. 338). The rapier with trapezoidal hilt from Hallenslev, Holbaek Amt, Zealand (Aner and Kersten 1976, 26 no. 673, Taf. 15), has a lozenge section with bevelled edges. More detailed publication of Burgess' scheme should resolve these problems.

Burgess (1974, 201 n. 221) claims that the weapon in the MII burial from Orsdorf, Kr. Rendsburg, Holstein (Jacob-Friesen 1967, 132, 223, 332 no. 748, Taf. 49, 9), is a trapezoidal-hilted rapier. This has a damaged hilt with two rivets and two distinct notches and a lozenge-section blade with bevelled edges and a British origin is not certain. In any case, the MII context does not support the MBA1 correlation which he claims.

The rapier from Antwerp which Mariën describes as Irish (1952, aff. 178, 2) has four rivets and a narrow midrib with bevelled edges. Both the number of rivets and the blade section deny this identification. The weapon from Döllinghausen, Kr. Bersenbrück, Lower Saxony (Sprockhoff 1941, Taf. 33, 5), has a similar blade and the number of rivets is certainly a continental feature.

Solid metal hilts occur on a few trapezoidal-hilted rapiers (List 29). The example residual in the Bronze Final III hoard from Saint-Genouph, Indre-et-Loire (Hundt 1962, 34-35, Abb. 4, 4-8), has four rivets but X-ray photographs show that the smaller outer pair do not perforate the hilt of the rapier, which appears to belong to Group III. The solid-hilted rapier in the Mont-Saint-Aignan hoard (List 29, 3) has the same pattern of rivets but its blade section, lozenge with offset edges, indicates origin possibly as early as Reinecke B, though it should be typologically later than Tréboul swords (Schauer 1972c, 24 n. 37). The Kanturk rapier has the same pattern of rivets and should be broadly contemporary (List 29, 2). The Abbeville hilt has just two rivets; its blade form is uncertain (List 29, 4). The Ambleside rapier is represented with two rivets (List 29, 1). The Mont-Saint-Aignan rapiers suggest that lozenge-section blades were adapted in northern France from central European forms of Reinecke B or C1 and the Saint Genouph hilt should be equally early because of its resemblance to early Tumulus solid-hilts (Hundt 1962, 52, Abb. 4, 1-4).

Trapezoidal-hilted rapiers are especially common in the lower Thames valley and in northern East Anglia, on the south-western margins of the Fens, (Rowlands 1976, 70; Trump 1968, 221-222; Map 16) and the Thames concentration is reflected in the lower Seine valley. These rapiers were the dominant Middle Bronze Age weapon in north-eastern France as well as in Britain and the typological variations noted above indicate manufacture in France, albeit in a common tradition. Rapiers are not uncommon on the lower Rhine, as well as further north, but more details of the Dutch examples (List 28, 34-38) are needed before these can be confidently attributed to the western tradition rather than the north German tradition, as yet ill-defined (Bergmann 1970, Teil B, 35, Liste 67).

ORNAMENTS

The ornament horizon

Smith's seminal study of the Middle Bronze Age in southern Britain began with a discussion of a group of ornaments found in several hoards. For most of these: twisted neck-rings, twisted bracelets, coiled finger-rings, lozenge-section bracelets, ribbed bracelets and Monkswood ornaments, a Nordic origin was suggested, as for socketed axes and knobbed sickles (1959, 148-151). The date of this 'ornament horizon' was restricted to MIII (*ibid.*, 159-162). Eschewing the idea of migration from northern Europe, she proposed that the ornaments were derived from, 'an eclectic region in North-east France', whence Picardy pins were certainly derived, and considered briefly that double-knobbed sickles, ribbed bracelets and lozenge-section bracelets could, in part, have been transmitted from southern Germany through this region (*ibid.*, 162-164). Butler named the period of northern influence the 'Taunton phase', and added disc-headed pins with looped or perforated shafts to the list of relevant ornaments (1963a, 218-223). The ornament horizon and the associated tools have become fundamental for the chronology of the British Middle Bronze Age and the Deverul-Rimbury culture (Smith 1959, 155-159, 181-185).

In their studies of the Nordic material, both Smith and Butler had to rely mainly on the works of Kersten (n.d. [1935]) for southern Scandinavia and Sprockhoff (1937; 1941) for north-western Germany. It was some years before these publications of pre-war research were superseded; indeed Bergmann's 1941 thesis was published only in 1970. Over the past decade we have new work, by Randsborg (1968; 1972) for southern Scandinavia, by Laux (1971) for the Ilmenau region and by Schubart (1972) for Mecklenburg. It is clear that the correlation of the Nordic with the central European chronology established by these researches will not allow British MBA2 to last to the beginning of MIV, no earlier than HaA2 (see p. 30). HaA2 represents the end of the subsequent LBA1/Penard phase whose beginning must be placed in Reinecke D and MIII only begins at the same time as Reinecke D. There is thus serious chronological reason for undertaking the further study of the 'triangular... connection' between Britain, north-eastern France and north-western Germany, called for by Burgess (1974, 315 n. 240). Such study has also been carried out by A. J. Lawson (B.A.R. 67, 1979) and Burgess has incorporated provisional results in his latest chronology (1976c, 73-75, fig. 4.9).

Disc-headed pins. LIST 30. MAP 17

Both of the Zuidlaren pins (List 30, 4) should be of Reinecke B date and the pin from Merendree (List 30, 2), which shares an ornamented sinuous shaft with the second Zuidlaren pin should be broadly contemporary. Comparable pins from southern and western Germany usually have perforated shafts (Torbrügge 1959a, 35-37, Abb. 9, 10, 16, 18; Kubach 1977, 91-96 nos. 59-61) but the angular or cruciform ornamented shafts are characteristic of the Lochham phase.

Gerloff (1975, 122) claims a contemporary date for the Shrewton pin (List 30, 1), but the round-section, undecorated shaft is not a characteristic Tumulus feature. This pin was found in the ditch of a barrow and is difficult

to date precisely. Kubach groups a similar pin (1977, 395 no. 963) with early Urnfield examples (ibid., 397-398).

The affinities of the Noordwijkerhout pin (List 30, 5) are uncertain; Butler refers to it as Middle Bronze Age (1963c, 244). It could be early, like the Zuidlaren pins, or late, like the Elp pin (List 30, 3).

Nail-headed pins. LIST 31. MAP 17

The Weerdinge burial indicates a MII/III date for its nail-headed pin (List 31, 4). One of the Nijlande pins come from the central burial in a barrow surrounded by a widely-spaced post circle and the other from a secondary burial; this is the same peripheral structure as at Weerdinge. The Emst barrow lacked peripheral structure (List 31, 3, 5). The Elp pin (List 31, 2) is probably a north-west German type of MII. The Vorstenbosch pin bears ornament similar to that of the Weerdinge pin (List 31, 1) and was probably associated with a Hilversum urn.

Roll-headed pins. LIST 32. MAP 17

The roll-headed pins with twisted shafts could be as early as Reinecke B/Sögel (List 32, 1-2) though later occurrences are known (Audouze and Courtois 1970, 36-73; Kubach 1977, 543 n. 47). The roll-headed pin in the Weerdinge burial belongs to MII/III (List 32, 3).

Gerloff (1975, 122) compares certain twisted pin shafts from Wessex burials to early Tumulus roll-headed pins with twisted shafts but none of these is certainly known from Britain.

Wheel-headed pins. LIST 33. MAP 17

The wheel-headed pins of the form present in the Weerdinge burial (List 33, 2) developed in central Europe during Reinecke C1; finds from Lower Saxony belong to Zeitgruppe III, that is somewhat later. The Nijmegen pin (List 33, 3) is a rare form with only a single datable parallel, from Wixhausen, Kr. Darmstadt, Hesse (Kubach 1977, 222 no. 429), dated to Reinecke C2. It is possible that all the Dutch pins are of Middle Rhine origin.

The pin in Ipswich Museum (List 33, 1) is of a form with a wide chronological range and common in eastern Lower Saxony (Laux 1976, 27-33, Taf. 45, B; Bergmann 1970, Teil B, 56, Liste 198, Taf. 10, 5, Karte 77). It seems probable that it is a modern import.

Pins with long ribbed heads. LIST 34. MAP 18

Pins with long ribbed heads are common in the Haguenau Forest (Schaeffer 1926, figs. 69, D, G, R-S; 70, D). Ziegert includes the type in his Zeitgruppe 5, Reinecke C2 (1963, 14, Taf. 6) and Hatt uses it to exemplify his Bronze Moyen III (1955, fig. C, 3; Zumstein 1976, 638, pl. II, 6). It occurs in the hoard of Bronze Moyen and Bronze Final I pins at Vers, Gard (Schauer 1975a,

50, Abb. 4A, 3), and is also known in southern Germany (Torbrügge 1959b, 71, Taf. 3, 8; 25, 10; 59, 6). Kubach includes the Arry pin (List 34, 5) among the comparanda for a group of pins with thickened heads from Hesse (1977, 309 n. 12) of Reinecke C2 date, probably derived from the Haguenau type; pins with long ribbed heads are rare in Hesse (*ibid.*, 316-319 nos. 762-765).

The northern French examples are probably of Haguenau origin (Audouze and Courtois 1970, 11). The Baux-Sainte-Croix hoard (List 34, 2) confirms the Bronze Moyen III date.

Trumpet-headed pins. LIST 35

These pins with trumpet-shaped heads are probably related to late Tumulus forms with more elaborately ornamented shafts. There are comparable pins from Bavaria, Schwaighauser Forst, Ldkr. Regensburg (Torbrügge 1959b, 192 no. 266, Taf. 60, 5), from Switzerland, Estavayer-le-Lac, Fribourg (Osterwalder 1971, Taf. 22, 13), and from the Haguenau Forest, Königsbrück, barrow 13, burial 4, Bas-Rhin (Schaeffer 1926, fig. 36, X).

Picardy pins. LIST 36. MAP 18

In a fundamental article, Hawkes (1942) related the pins from Amiens, Caix and Villers-sur-Authie (List 36, 7-9) to the British pins from St. Margaret's-at-Cliffe, Ramsgate and Wandsworth (List 36, 1-2, 4). He compared these Picardy pins with ornamented swollen shafts, all but one looped, to Tumulus Lochhalsnadeln but claimed a retarded origin to allow for the Late Bronze Age date then current for the Deverel urn associated at Ramsgate (27) and indicated by the (residual) example in the Caix hoard (140). It is now recognised that Picardy pins are Middle Bronze Age, as shown by the Villers-sur-Authie hoard (Smith 1959, 161-162).

Picardy pins differ from central European Tumulus pins in the form of the head (Hawkes 1942, 34-35). The nearest Tumulus pins are those of the Haguenau Forest (Schaeffer 1926, fig. 68, D-O; Ziegert 1963, Taf. 6; Zumstein 1976, pl. II, 2-3) and the Middle Rhine (Ziegert 1963, Taf. 9; Kubach 1977, 96-123) which belong to Bronze Moyen I (Hatt 1955, fig. A, 2-3; Zumstein 1976, 638) and Reinecke B/C1 (Ziegert 1963, 29; Kubach 1977, 103, 107, 112). These pins have thickened, rounded or biconical heads. This suggests that the Fort-Harrouard pin may be of Haguenau origin (List 36, 5), while the others, with thick disc-heads, are local versions. Pins of Bronze Moyen II in the Haguenau Forest with swollen, unperforated shafts and trumpet-heads, bearing ornament on both shaft and head (Schaeffer 1926, fig. 68, Q-Z, a-f; Hatt 1955, fig. B, 2; Zumstein 1976, 638, pl. II 4) appear to be absent from northern France.

Picardy pins show a tradition of ornament common between north-eastern France and south-eastern England during the later Middle Bronze Age, more specifically between the Somme valley and the Thames and Channel coast.

Pins related to Picardy pins. LIST 37

Most of these pins are probably derivatives of the Picardy pin type, linked by the single looped example in the Villers-sur-Aithie hoard (List 36,

9). The examples from the Amiens area and the Plainseau hoard (List 37, 12-13) both have thick disc-heads like Picardy pins, while the Seine pin (List 37, 11) has the thin disc head more common on straight shafted looped pins (List 38).

The Tredarvah and Plaitford associations indicate MBA2 dates for their looped ornamented pins (List 37, 2-3). The Fowey pin (List 37, 1) is very similar to the Plaitford example and should be contemporary. Herity (1969, 16-17) compared the Cornish pin to the example in the Smedrová hoard, Bohemia; both of the photographs which he cites (*ibid.*, 17 n. 2-3) illustrate this same pin. Butler had discussed this as a parallel for the Haamstede pin (List 39, 6) and these are clearly earlier than the Fowey pin. The association of amber with a conventionally Middle Bronze Age object recurs at Colchester (Davies 1968). The South Cadbury pin (List 37, 6), though straight and un-looped, is related to the Picardy type by its ornament and the form of its head. The South Wiltshire and Corran pins both have double swellings with incised ornament and the latter is looped (List 37, 7-8). The double swelling is characteristic of early Urnfield Lüdermünd pins (Hachmann 1956, 64-65; Kubach 1977, 321-323; Laux 1976, 85); there is an example in the Bronze Final I hoard from Vernaison, Rhône (Schauer 1975a, 49-50). Recessed heads, as on the South Wiltshire pin, appeared a little earlier (Randsborg 1968, 44 n. 130). The Corran pin is probably derived from the Picardy type (Eogan 1964, 282) and the double swellings on these insular pins may not owe anything to continental influence. The pin in the Hunstanton hoard has a loop and bands of incised lines to relate it to the Fowey, Tredarvah and Plaitford pins (List 37, 5); its ribs relate it to the pin in the Baux-Sainte-Croix hoard (List 37, 9). The pins in both of these hoards are probably of pre-Urnfield date, though related to early Urnfield ribbed pins, and the presence of a loop on the Thames pin (List 37, 4) suggests a MBA2 date.

Disc-headed pins with looped or perforated straight shafts. LIST 38. MAP 18

The British pins of this type form a homogeneous, though widespread, group. The Hanley Cross Barrow find (List 38, 3) indicates a date in MBA2. The suggestion of Burgess (1976b, 90) that the large ornamented lozenge plate could be derived from the bow of an Urnfield Spiralplattenfibel appears unlikely; there is only one British find of such a brooch and that has a dubious provenance (see p. 127). The looped or perforated shafts of these English pins suggest some relationship with Picardy pins. The same derivation is possible for the French examples (List 38, 8-9), though these have been dated to Bronze Final I by analogy with early Urnfield disc-headed pins (Gaucher and Mohen 1974, 51).

The undecorated pin from Scotland is dated to the late Middle Bronze Age by its associations in the Glentrool hoard (List 38, 6); the two Irish pins are usually assumed to be related. This small insular group has been derived from an equally small central German group (Coles 1963-64, 122; Butler 1963a, 148): Marzhane, Kr. West-Havelland, Brandenburg (Janssen 1935, 212-214, Abb. 5); Arneburg, Kr. Stendal, Altmark (*ibid.*, 214, Abb. 7e); Zethlingen, Kr. Salzwedel, Altmark (*ibid.*, 214). The first find is dated to MII, the others

to MIII, indeed the Arneburg burial contains an early Urnfield hook-tanged knife of HaA2 (von Brunn 1968, 153 n. 4). Thus, only the Marzhane find is sufficiently early to have influenced the Glentool pin unless we allow for retardation of the Scottish Middle Bronze Age. While this is possible, I should be less ready than Coles (1963-64, 122) to dismiss the possibility of derivation from the English pins.

Butler (1963a, 150) has suggested that the central knob on the head of the Hanley Cross pin is related to central European Spindelnadeln, as is the pin from Elp (List 30, 3). While this is possible, the knob could more economically be derived from Picardy pins.

Miscellaneous pins. LIST 39

The earliest of these miscellaneous pins is the example from Haamstede (List 39, 6) which belongs to a small group with biconical heads and shafts either looped or with a perforated assymmetrical swelling. This group is of Carpathian origin, a precursor of the Lochham pins with perforated swollen necks (Kubach 1977, 87-88; Hänsel 1968, 84-85, Liste 76). A few examples occur in north-western Europe; the only datable find is in a late Sögel burial from Baven, Kr. Celle, Lower Saxony (Laux 1976, 50 no. 236). The Dutch pin may be part of this north German group (*ibid.*, 50 n. 16) but there is a possible example in a Reinecke B burial from Gröfhausen, Kr. Darmstadt, Hesse (Kubach 1977, 87 no. 57, 90). A Lochham/Sögel date is probable for the Haamstede pin, broadly contemporary with the perforated pin in the Overloon hoard (List 39, 5), a Sögel type.

The pin in Ipswich Museum belongs to the MII/early MIII Westendorf type found in Lower Saxony (Laux 1976, 59-60). Like the wheel-headed pin in the same collection (List 33, 1), this is probably a modern import.

Groups of spaced ribs occur on a few Tumulus pins (Torbrügge 1959b, 71, Taf. 40, 6; 79, 9-10) probably of Reinecke C (Kubach 1977, 294, nos. 677-678, 295-296). The Amiens pin (List 39, 4) should be related to this group. A late Tumulus date is also probable for the pin with incised ornament from the Abbeville area (List 39, 3; Kubach 1977, 295 no. 686, 297, n. 27; Schaeffer 1926, figs. 36, W; 68, h, b).

The precise form of the Fort-Harrouard pin is uncertain (List 39, 2), but the looped shaft should indicate a Middle Bronze Age date.

Pins: discussion

The continental affinities of the pins from the Camerton-Snowhill dagger graves of the later part of the British Early Bronze Age have been discussed recently by Gerloff (1975, 118-123) who concludes that, while most are related to pins of the central European Early Bronze Age, Reinecke A, some of these types were still current during the Middle Bronze Age Tumulus phase, Reinecke B and C. The form of the bulb-headed pin in the Camerton burial (*ibid.*, 104 no. 175, pl. 48F, 3) can be matched at Arbon-Bleiche, Thurgau (Fischer 1971, Taf. 4, 6-9), in a transitional Reinecke A/B context (Osterwalder 1971, 16). These pins appear to have the usual more solid, perforated head, not the more hollow head of the Camerton pin (pace Gerloff 1975, 119).

The bronze ring-headed pin from barrow G.24, Amesbury, Wilts. (*ibid.*, 105, no. 179, 110-111, 120-121, pl. 48G, 1), can best be compared to the examples in the burial from Kernonen en Plouvorn, Finistère (Briard 1970a, 28, fig. 10, 4; 1975, fig. 5, 3-5), dated equivalent to Reinecke B by its early wheel-headed pin (Kubach 1971, 34 n. 5; Gerloff 1975, 97), but the central European Reinecke B ring-headed pins cited by Gerloff (*ibid.*, 121) have perforated shafts and it is only this form which persists into the Middle Bronze Age of central Europe (Kubach 1977, 73 n. 54). The disc-headed pin from Shrewton (List 30, 1) is not certainly of early Tumulus origin, nor are the fragments of twisted shafts from Wessex (see p. 75). The distribution of central European early Tumulus pin types appears to be confined to the continent: the disc-headed pins from Zuidlaren and Merendree (List 30, 2, 4), the roll-headed pins with twisted shafts from Fort-Harrouard and Hijken (List 32, 1-2) and the pins with perforated shafts from Fort-Harrouard (List 36, 5) and Haamstede (List 39, 6). The Overloon pin (List 39, 5) is a contemporary north-west German type.

Picardy pins could have developed during the earlier part of Bronze Moyen (List 36) but the first hoard finds, belong to the later Middle Bronze Age. The disc-headed pin from Elp is of late Tumulus origin (List 30, 3). The pins with long ribbed heads are also late Tumulus forms which appear in Haguenau burials of Bronze Moyen III date (List 34). The trumpet-headed pins (List 35) and the pins from the Abbeville and Amiens areas (List 39, 3-4) are also of late Tumulus origin. The wheel-headed pins from Weerdinge and Nijmegen (List 33, 2-3) are also late Tumulus forms, possibly all of middle Rhine origin. The Weerdinge burial suggests that nail-headed and roll-headed pins were still current at this time (Lists 31, 4; 32, 3). The group of pins related to or derived from the Picardy type (Lists 37-38) occur in Britain and north-eastern France; hoard evidence suggests a MBA2 date, but some could be later, and the ribbed pins (List 37, 4-5, 9) are transitional to LBA 1 forms.

Twisted neck-rings. LIST 40

Between forty and fifty bronze twisted neck-rings have been found in Britain and Ireland, most in Wessex and some in East Anglia (Rowlands 1976, map 22); hoard finds are common. Only the neck-ring in the Hollingbury hoard (List 40, 27) is assuredly known to have tapering terminals; all the other examples probably had hooked terminals. While twisted neck-rings occur in a few Bronze Final III hoards in north-eastern France (List 215) there is one example with hooked terminals in the Bronze Moyen hoard from Villers-sur-Authie (List 40, 33). All the Belgian neck-rings have tapering terminals (List 40, 34-35). No comprehensive study has yet been undertaken to ascertain whether these neck-rings were cast in their twisted form or twisted from a rod (Butler 1963a, 138).

The derivation of twisted neck-rings from the Nordic area is usually accepted (Smith 1959, 149; Butler 1963a, 137-141; Coles 1963-64, 124; Eogan 1964, 273; Rowlands 1976, 88-90) and MIII quoted as the floruit of the type, following Kersten (n.d. (1935), 37-38). We may now examine more recent accounts of twisted neck-rings in northern Europe. From Mecklenburg, Schubart (1972, 26-28, 191-192, Liste 8) records eighty-five neck-rings with undecorated terminals, mostly hooked, from forty-nine finds, and thirty-four

neck-rings with indistinct terminals from twenty-eight finds. Most of these finds belong to MIII. From north-western Germany, Bergmann (1970, Teil B, 52-53, 148-149, Liste 184, Taf. 9, 3, Karte 67) records twenty-two neck-rings with hooked terminals from fourteen finds, ten neck-rings with tapering terminals from nine finds and twenty-one finds of neck-rings with indistinct terminals. Only one find is dated to MIII, the rest are MII. In the Lüneburg area there are five neck-rings with plain terminals from four finds and eight with hooked terminals from seven finds (Laux 1971, 44); the finds are late MII and early MIII. Twisted neck-rings with tapering terminals were considered by Sprockhoff to be current from MIII to MV in northern Germany, but most common during MIV (1937, 44-45); his list has been amplified by von Brunn (1968, 127-138, 168) who has shown that they were common in central Germany from HaA1 to HaB1, i.e. late MIII and MIV. From southern Scandinavia, Kersten listed fifteen provenanced Danish finds of twisted neck-rings with hooked terminals alongside thirteen finds from Schleswig-Holstein (n.d. (1935), 37-38, 120, Beilage 6, Form 2); some finds are MII, more MIII. Randsborg includes several finds containing such neck-rings in his Sub-Period III (1972, Appendices 43, 9-10, 93; 44, 11; pls. VII, 1; XIII B, 2; XX, 2). The twisted neck-ring with solid section is not a characteristic MIV type according to Baudou (1960, 54), but Thrane (1960, 27) has shown that examples with hooked terminals occur in hoards of MIV, e.g. Jernhyt, Haderslev Amt, Jutland (ibid., Abb. 1, 8), and of MV, e.g. Stade, Sorø Amt, Zealand (Broholm 1946, 215, M130). Twisted neck-rings cannot be restricted to MIII and a late MII origin fits better into the relative chronology.

British finds are consistently of MBA2, except for the fragment in the LBA3 hoard from Green End Road (List 40, 2). All the examples analysed: Barton Bendish, Hollingbury, Green End Road, Monkswood and Taunton (Brown and Blin-Stoyle 1959, Appendix nos. 20, 155, 300, 343, 414, 419) belong to Group I with low lead content, so the Green End Road fragment is clearly residual. North-west German neck-rings with plain terminals can be of MII date so the Hollingbury example need not do violence to its MBA2 association (List 40, 27). The Scottish and Irish associations are also late Middle Bronze Age (List 40, 31-32) and twisted neck-rings were imitated in Irish gold (Eogan 1967, 130-131).

The date of the Belgian neck-rings (List 40, 34-35) is not certain. These all have tapering terminals, so it is possible that they were not derived from the British group (de Laet 1974, 352) and there is only a single Dutch find reported (List 40, 36) to link them with the Nordic neck-rings, so they may be related to the central German group and be of later LBA1 date.

Decorated bracelets. LIST 41. MAP 19

Massive bracelets, annular and penannular, with complex incised decoration are common in France during Bronze Moyen III and at the beginning of Bronze Final. They are known as Bignan bracelets and are most characteristic of Bronze Moyen III in Brittany (Briard 1965, 123-125; Briard and Lecerf 1975, 112-113, fig. 4); similar bracelets are known in southern England during MBA2 (Rowlands 1971a; List 41, 1-15) and a single Belgian bracelet probably belongs to this type (List 41, 32).

Decorated bracelets and anklets are also common north-western Germany and it has been suggested that the ornament on the French and British bracelets was derived from this area (Rowlands 1971a, 192-193; Smith 1959, 160). Bergmann (1970, Teil B, 65-66, Liste 236-239, Taf. 14, 3-6, Karte 101-107) provides only schematic illustrations and Laux's study of the bracelets of the Ilmenau area (1971, 62-66), where they are most common, is more useful. Both bracelets and anklets are often found in pairs with inhumation burials; the dearth of such burials in England and France prevents such a distinction being made. The penannular form is usual; sections can be massive: round, oval, flattened or D-shaped; or hollow: C-shaped. Ornament is divided into transverse bands, which can cover the whole outer face with alternating motifs, or into separate zones of longitudinal or pointed oval ornament. This Lüneburg style of ornament leaves less space undecorated than the western style and also displays a more restricted repertoire of motifs, largely confined to transverse lines, hatched lines, herring-bone and pointed oval. The herring-bone motif is rare in France and England, though it occurs on both bracelets from Liss (List 41, 7; Table 9, V). Pointillé ornament, common in the west, appears to be absent from the Lüneburg style, which also lacks hatched triangle, criss-cross, multiple zig-zag and V- motifs. The western craftsmen used a more extensive range of motifs to produce a greater variety of ornament. The area of origin of the Lüneburg motifs appears to be east-central (von Brunn 1968, 125-126, 187, 245) and Jacob-Friesen (1967, 174; 1973, 574) has noted the lack of close resemblance between north German and west European ornament. Some of the north German bracelets belong to late MII but the characteristic Lüneburg form belongs to Laux's Zeitgruppe III early MIII (Laux 1971, 64-65).

Sprockhoff (1941, 82) considered that the decorated bracelets from Ramsgate (List 41, 9) were of Ilmenau origin. While there are motifs in common, Laux illustrates no identical Lüneburg example, the bracelet from Bergen, Kr. Celle (1971, Taf. 12, 7), being the most similar. The amount of undecorated space on the Ramsgate bracelets seems alien to the Lüneburg style. The Ramsgate bracelets can be matched by the Kent pair (List 41, 10) and all four seem to be no more than rather simple examples of the British ornamental style and need not be of German origin.

A burial from Steenode, on the north Frisian island of Amrum, contains two decorated bracelets (Kersten and La Baume 1958, 60, 148, Taf. 80, 21-22). One is annular, the other penannular, and both bear pointillé ornament and opposed curves, while one has criss-cross panels. These features are closer to the ornament on French and British bracelets, especially the Milton and Gable Head examples (List 41, 7-8), than to the Lüneburg style; annular bracelets are unusual in north-western Germany. Sprockhoff listed this burial as MIV (1937, 20) and included pointillé ornament as characteristic of some of his MIV bracelet types (*ibid.*, 45-47). The Steenode bracelets are so much like western examples that they could be imports; a MIV date does not seem necessary, for the associated twisted neck-ring with tapering terminals could be as early as MII (see p. 80) and, in France at least, decorated bracelets are found with early Urnfield material (Briard, Cordier and Gaucher 1969, 64), so an early MIII date is not impossible. Bracelets similar to the Steenode examples were used to date a hoard from Schleswig

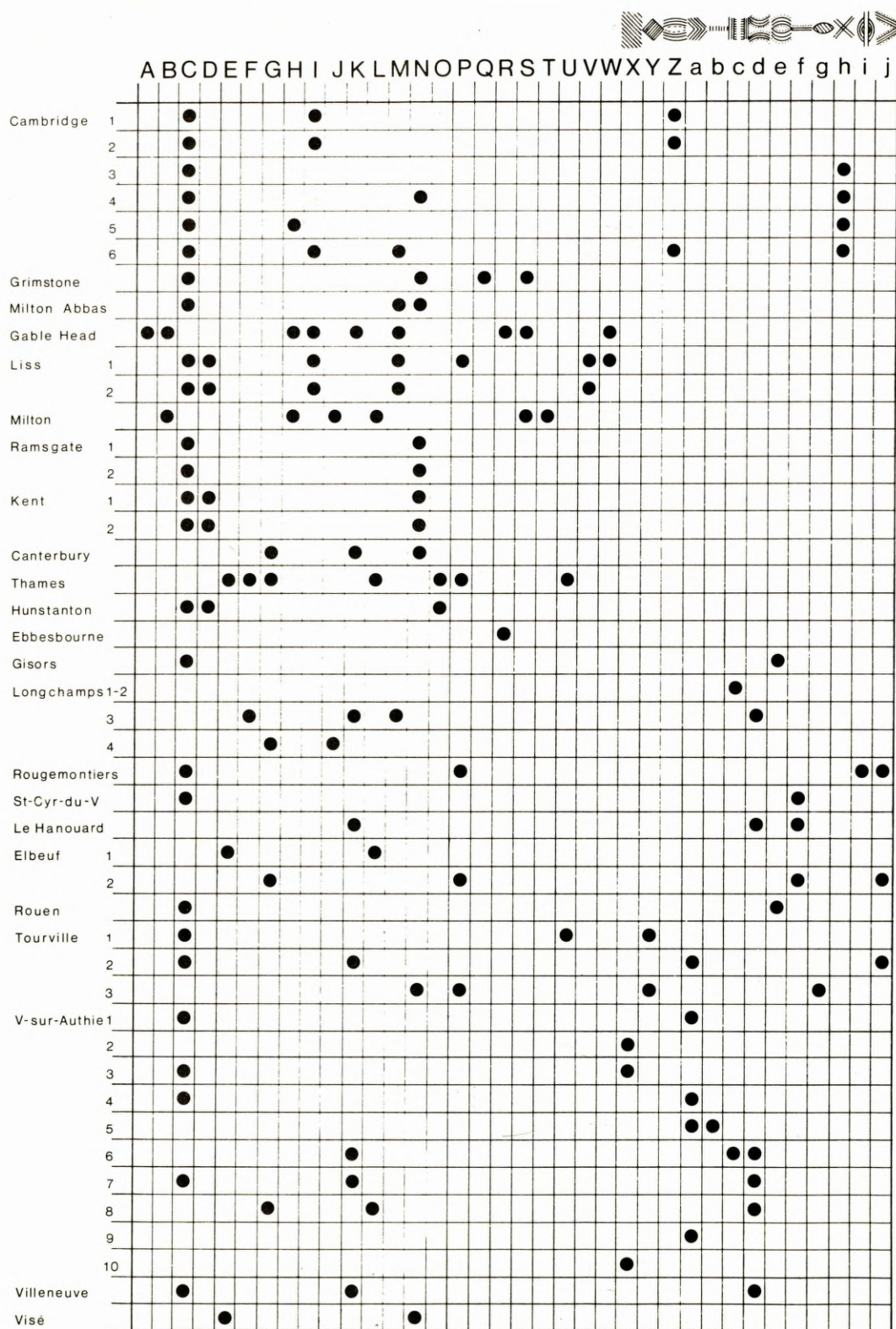


Table 9. Motifs A-W after Rowlands 1971a, fig. 5.

'frühestens am Ende der Periode III' (Kersten 1952, 10, 14, Abb. 1), though the associated decorated discs are normally regarded as MII (*ibid.*, 14; Bergmann 1970, Teil B, 55; Laux 1971, 45). These bracelets could also be of western Middle Bronze Age origin in a Nordic MII find.

There is thus little evidence to support a derivation of the style of British and French decorated bracelets from MIII Ilmenau ornament, either in terms of style or of chronology.

Rowlands correctly relates the decorated bracelets of southern England to those of north-eastern France and the numerical superiority of French bracelets, cf. the large number in the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969, 51-61, figs. 12-15, tableau V), suggests a French origin but it does not seem necessary to regard all the British bracelets as imports, as he does (1971a, 192-193). Among the English bracelets, ornament shows regional groupings. The two pairs from Ramsgate and Kent (List 41, 9-10) have similar simple patterns of longitudinal hatched lines divided by bands of transverse lines. The annular bracelets from the Gable Head and Milton hoards, either side of Langstone Harbour, share transverse hatched bands, criss-cross panels, pointed oval line and pointillé, bands of zig-zag, pointillé and hatched lines. The bracelets in the Cambridge area hoard (List 41, 1) share a common range of motifs. The Norton Fitzwarren bracelets (List 41, 14) are not included in Table 9 pending definitive reconstruction of their motifs; the arrangement of the motifs on these bracelets is mostly peculiar to this hoard, though the pattern on the terminals of the penannular pair resembles that on the terminals of the Thames bracelet (List 41, 12). Additional motifs to those on Rowlands' table (1971a, fig. 5), on bracelets from north-eastern France, are absent from British bracelets (Table 9, X-Y, a-g, i-j) and additional British motifs, on the Cambridge area bracelets (List 41, 1), are absent from French bracelets (Table 9, Z, h). False terminals occur on several French bracelets (List 41, 21, 22, 24-25) but only once in Britain (List 41, 13). This suggests local manufacture on either side of the Channel.

We must now examine the question of the technique employed to decorate these bracelets. Rowlands concludes that the ornament on British bracelets was applied after casting. "There is no sign [on the Liss bracelets] of 'stitching' or unequal cutting depths which would indicate the use of an indirect tracer technique; from which it may be concluded that the tool was held in the hand and that the individual lines were produced with a single stroke", (1971a, 187). According to Briard and Lecerf (1975, 111) the bracelets were formed from cast rods, bent, hammered and polished before, "le travail au burin et au ciselet", to produce the ornament. However, competent metallurgists have denied that a bronze tool can be used to decorate bronze, or even copper or gold (Maryon 1949, 118; Lowery, Savage and Wilkins 1971, 170), and there is an obvious dichotomy between their pronouncements and the observations of the archaeologists. It is only by use of a tracer, a tool hammered into the metal at successive points to produce a chased line, that bronze may be worked with bronze (*ibid.*, 173, 181). Little material has been examined, though traced ornament has been identified on a Romanian disc-butted shaft-hole axe of mid-second millennium date (Lowery, Savage and Wilkins 1972). Another relevant technique is the heating of a bronze object to allow impression or excision by a sharp tool; this was employed on the pins in the Late Bronze

Age Villethierry hoard (Mordant and Prampart 1976, 139-153, 220-221).

More such work is needed to ascertain the techniques used to decorate Bronze Age metalwork but the possibility of the use of iron tools may be considered. At Bargerosterveld, Drenthe, an iron point has been found on a causeway with C14 dates of: 1195 ± 55 b.c. GrN 4342 and 1170 ± 50 b.c. GrN 4149. From an aisled longhouse in the adjacent settlement comes iron slag in a pit from which charcoal has produced a date of: 1140 ± 60 b.c. GrN 5775 (van der Waals and Butler 1976).

Finds of iron in European Bronze Age contexts have been discussed by Kimmig (1964, 274-281), Stjernquist (1961, 78-84) and Powell (1976, 3-5). The earliest occurrence in northern Europe appears to be a ring in a Sögel inhumation from Vorwohlde, Kr. Sulingen, Lower Saxony (Sprockhoff 1930b, 197-199, 236, Abb. 6b; Bergmann 1970, Teil A, 66 no. 200). There is an iron knife in a MIII burial from Grødeby, Bornholm (Montelius 1913, 316; Stjernquist 1961, 79, 83; Kimmig 1964, 274). In central Europe, an iron dagger blade has been found in a pit of the Otomani culture, Reinecke A2/B1, at Gánovce, Poprad, Slovakia (Vlček and Hájek 1963), but this may be an import from the Near East (Vladár 1973, 294). Other examples of iron points appear in HaB or MV contexts (Kimmig 1964, 280-281 nos. 9, 20-22). The use of small iron tools, undistinguished objects with poor rates of survival and discovery, should not be discounted during the Bronze Age.

Briard was non-committal about the origin of decorated bracelets (1965, 135) and has subsequently suggested a Tumulus origin (Briard and Lecerf 1975, 113). Massive bracelets with incised ornament are known from the early Tumulus period on the Middle Rhine (Richter 1970, 119-120), southern Germany (Torbrügge 1959a, 38, Abb. 9, 4; 12, 7) and in the middle Tumulus phase in Switzerland (Osterwalder 1971, 25, Taf. 4, 4; 5, 10-11; 8, 1-2, 4-6, 13-15). Similar bracelets are known in the Haguenau Forest (Schaeffer 1926, fig. 72) from Bronze Moyen I (Zumstein 1976, Pl. II, 2). Most of these bracelets bear simple motifs of transverse lines, plain or hatched, though the simple pointed oval does occur (Schaeffer 1926, fig. 49, L). Elaborate incised ornament occurs on Tréboul spearheads in Brittany (Briard 1965, 86, fig. 25; Briard and Onnée 1971, 27-28, fig. 3B). Ornaments are very rare in the Tréboul phase (Briard 1965, 94), which suggests that Bignan bracelets were intrusive. Incised and pointillé ornament was not alien to Britain; it occurs on Early Bronze Age axes (Megaw and Hardy 1938) and daggers (Gerloff 1975, 49), as well as sheet and cast bronze bracelets (Britton 1963, 278-281), and the use of linear ornament on sheet gold continued into the Middle Bronze Age (Hawkes 1961a; 1962). Rowlands has pointed out that incised decoration was not common on other MBA2 types in southern Britain (1971a, 196-198), though Picardy pins (see p. 76), also derived from France, also bear incised ornament.

The application of decoration after casting implies that each individual bracelet or pair was decorated as a separate job, probably performed in local areas. The overall homogeneity of motifs suggests very close contact between craftsmen on both sides of the Channel also reflected for ornaments by Picardy

pins, though finds of decorated bracelets in north-eastern France are common in the lower Seine valley rather than in Picardy (Map 19), and their appearance in Britain may be related to that of Norman palstaves.

A Middle Bronze Age date is possible for the Helston bracelets (41), for only at this time were bronze bracelets with complex decoration common, but the Cornish bracelets differ in form and ornament from the bracelets discussed here and could well be Late Bronze Age.

Ribbed bracelets. LIST 42. MAP 20

Penannular bracelets with longitudinal ribs occur in several British hoards of MBA2 and on settlement sites assumed to be contemporary (Rowlands 1976, 91-92; Smith 1959, 146, 156, 158) and are usually thought to have been derived from Nordic MIII forms (Smith 1959, 149-150; Butler 1963a, 155-157), though French and Tumulus elements have been recognised (Smith 1959, 164; Rowlands 1976, 92).

The British bracelets are unsophisticated, with straight or slightly tapering sides and, usually, plain terminals; some examples bear notched ornament. Only the Methwold bracelet (List 42, 4), is certainly of Nordic origin; it belongs to the MII form with oval body and expanded terminals (Bergmann 1970, Teil B, 54-55, Taf. 9, 8-17, Karte 71-72; Laux 1971, 59-60; Kersten n.d. (1935), 49 form B1, 51 form C1a). These bracelets were derived from MI types of Unětice origin (Bergmann 1970, Teil B, 21).

Bracelets with parallel sides and straight terminals appeared in north-western Germany during MIII (*ibid.*, 66-67, Liste 241, Taf. 14, 8-10, Karte 108; Laux 1971, 60). These bracelets have between three and twelve ribs; those from the Ilmenau area usually have more than eight. Notches are common on the ribs which are usually unequal in size; transverse ornament is common on the terminals. Kersten's classification of MIII ribbed bracelets from southern Scandinavia (n.d. (1935), 50-52) has been elaborated by Randsborg, who distinguishes three variants among the bracelets, most of which come from north-west Jutland (1968, Abb. 31): I., plain ribs of equal size (*ibid.*, 62-63 n. 204); II, thicker peripheral ribs (*ibid.*, 63 n. 205-206); III, angular peripheral ribs, notched ornament (*ibid.*, 63-65 n. 207). Some of these bracelets were later assigned to Sub-Period III (Randsborg 1972, 55-56, appendices 30-31). The British bracelets lack the ribbed terminals of the Nordic examples, the recurved terminals of the Durnford bracelet (List 42, 9) are not a Nordic feature, and the notched ornament on British bracelets is executed less carefully than on Nordic bracelets. The expanded terminals of the Methwold and Ballooërveld bracelets (List 42, 4, 13) are absent from British bracelets. If the former is regarded as a modern import, then the latter find represents the most westerly extent of true Nordic ribbed bracelets. The MIII date of Nordic ribbed bracelets with straight sides is not reflected by the MBA2 contexts of the British finds.

French ribbed bracelets may be more relevant. Examples from the Haguenau Forest have straight or slightly tapering sides and their terminals are usually plain (Schaeffer 1926, 178-179, fig. 71, L-O). There are two such bracelets in a Bronze Moyen III find from Berstett, Bas-Rhin (Zumstein

1976, 638, Pl. I, 6). A Bronze Moyen I hoard from Pierre Cou, Chalonnese-sur-Loire, Maine-et-Loire, contains two bracelets with longitudinal ribs (Cordier and Gruet 1975, 171-174, 264, fig. 11, 1-8). Perhaps most like the British bracelets are the fragments in the Bronze Moyen III/Bronze Final I hoard from Malassis, Cher (Briard, Cordier and Gaucher 1969, 61, fig. 20, 186-188), with straight sides and notched ribs like the Boves bracelet (List 42, 12). More remote are examples from the Grotte des Buissières, Meyrannes, Gard (Roudil 1972, 107, fig. 37, 6), and the Larnaud hoard, Jura (Chantre 1875, pl. XLIX, 6).

It is interesting to note that bracelets with longitudinal ribs occur in the Early Bronze Age hoard from Migdale, Sutherland (Inv. Arch. GB26, 3-4), remote in space and time from the MBA2 bracelets of southern England. The French bracelets of Bronze Moyen appear to be more probable sources for the British bracelets than do Nordic MIII forms, though all probably hark back to the same Ūnetice origins. A possible Nordic MII contribution is the collar from Worlebury Camp, Weston-super-Mare, Somerset (Lawson 1976); this has notched ribs and is a Lüneburg form of late MII date (Bergmann 1970, Teil B, 52, Liste 180, Taf. 8, 15, Karte 66; Laux 1971, 40, Taf. 23, 1) derived from Tumulus collars of Hesse. If it is an ancient import it is a rare example of a characteristic north-west German type in Britain and its Somerset provenance may be significant for its proximity to the 'ornament horizon' hoards. However, bronze collars were never adopted as part of the insular repertoire and gold collars, gorgets, are an Irish Late Bronze Age type (Powell 1973-74). In the Somerset hoards from Norton Fitzwarren and West Buckland (List 42, 7-8) are ribbed bracelets with a central line of bosses. This is presumably a local form.

Plain penannular bracelets. LIST 43

Plain penannular bracelets are common in MBA2 hoards of southern England, especially in Hampshire, Wiltshire, Dorset and Somerset (Rowlands 1976, 93-94, map 23). The lozenge-shaped section is most common (List 43, 2, 4-5, 8, 12-13, 15, 17-18) and these plain bracelets are usually thinner than the more massive decorated bracelets. Smith compared the lozenge-section bracelets to Nordic MIII forms derived from the Tumulus culture (1959, 149, 163).

Bergman (1970, Teil B, 45-46, Liste 132-140, Taf. 7, 1, Karte 54-57) shows the variety of sections, including lozenge, current on penannular bracelets in north-western Germany; most finds belong to MII. The same variety is present in the Lüneburg area (Laux 1971, 62-63); most lozenge-section bracelets are MII (*ibid.*, 61). These bracelets were not common in southern Scandinavia before MIII (Kersten n.d. (1935), 45-48). The most westerly Nordic find appears to be Ballooërveld (List 43, 21) with lozenge-section bracelets alongside MII/III ribbed bracelets. To the south, whence the Nordic bracelets were probably derived (Laux 1971, 61), the lozenge section is less common than the more rounded section in Hesse, where it occurs over a wide range of time during the Tumulus and Urnfield periods (Richter 1970, 77-78). Plain lozenge-section bracelets are not common in the Haguenau Forest (Schaeffer 1926, fig. 62) and finds are rare further west, e.g. among the plain

penannular bracelets in the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969, fig. 24, tableau V). In north-eastern France, the plain bracelets in the Villers-sur-Authie hoard (List 43, 19) do not have lozenge sections.

Like their decorated and ribbed counterparts, plain penannular bracelets appear to have been fashionable in central, western and northern Europe during the later Middle Bronze Age. If the lozenge-section form is regarded as intrusive, then a Nordic origin does seem probable, but hardly restricted to MIII, for the British MBA2 associations render a MII origin from north-western Germany more likely.

To provide a terminus ante quem for the 'ornament horizon', Smith (1959, 160) quoted north-west German comparisons for the pair of plain bracelets with contiguous expanded terminals in the Blackrock hoard (List 43, 16), which she interpreted as typologically early examples of Nierenringe, comparing a bracelet in the hoard from Rethwisch, Kr. Vechta, Lower Saxony (Sprockhoff 1937, Taf. 18, 5). For Sprockhoff this hoard was MIV, but Tackenberg has dated it to MV (1971, 206, 215). In any case, the resemblance between the Blackrock bracelets and their supposed German counterparts does not appear to be sufficiently great to allow the precise dating proposed by Smith and a French Bronze Moyen origin seems more likely.

Like the Villers-sur-Authie examples, the plain penannular bracelets in the LBA1 hoards from Bois-de-Lessines and Veenenburg (List 43, 20, 23) are undiagnostic. If the fragments of lozenge-section bracelet in the Isleham hoard (List 43, 2) represent residual Middle Bronze Age ornaments (Britton 1960, 281), they are remote from their main area of distribution.

Most of the other sections found on British slender bracelets can be matched in north-western Germany, though often on massive bracelets: round (List 43, 1, 3, 6, 10, 18), sub-rectangular (List 43, 10, 11, 18), oval (List 43, 10) and triangular (List 43, 13). Bergmann (1970, Teil B, 45-46, Liste 132, 134, 138, 139, Taf. 7, a, c, g, h) dates most finds to MII, Laux (1971, 61-63) to MII and early MIII. The flat section (List 43, 12, 17) appears to be absent from north-western Germany. The more massive British bracelets (List 43, 7, 9, 14, 18) could be related to decorated bracelets; the more slender examples, except for the lozenge-section form, cannot readily be matched on the continent.

Twisted bracelets. LIST 44

Three MBA2 hoards from southern Britain (List 44, 1-3) contain twisted bracelets of rod or wire and there is a possible fragment from the ditch of a barrow on Cranborne Chase (List 44, 4). Smith regarded twisted bracelets as related to Nordic MIII examples, while admitting that they also occurred in Tumulus and early Urnfield contexts (1959, 149). The massive bracelets of twisted rod are probably reused fragments of twisted neck-rings (Butler 1963a, 143; Rowlands 1976, 93); the same conclusion was reached by Bergmann (1970, Teil B, 46) for the twisted bracelets of north-western Germany.

Massive twisted bracelets are not common in north-western Germany; examples are known mainly from MII and early MIII (*ibid.*, 45-46, List 144, Taf. 7, 5, Karte 58; Laux 1971, 64). The type is not recorded from

Mecklenburg (Schubart 1972). During MIII twisted bracelets are known from southern Scandinavia in bronze (Aner and Kersten 1973, 13 no. 46, Taf. 8; 140 no. 383, Taf. 81; Broholm 1943, 197, Grav 2364) and in gold (Aner and Kersten 1973, 62 no. 215, Taf. 36). Twisted bracelets are known from the Tumulus culture in Hesse (Richter 1970, 129) and there is an example in the Bronze Moyen I hoard from Piere Cou, Chalonnès-sur-Loire, Maine-et-Loire (Cordier and Gruet 1975, 171-174, fig. 11, 4), but twisted bracelets are not common in France before the beginning of Bronze Final I (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 159); they are conspicuously absent from the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969). The Bois-de-Lessines twisted bracelet (List 44, 7) is probably of early Urnfield date and this may also apply to the complete bracelet with tapering terminals from Fort-Harrouard (List 44, 5); the chronology of the other fragments from Fort-Harrouard is uncertain, as is the Denterghem fragment (List 44, 6). The massive twisted bracelets in the British hoards need have no specific continental relations.

There are twisted wire bracelets in the Barton Bendish, Monkswood and Sleenerzand finds (List 44, 1-2, 8) and the Berwick St. John fragment may be related (List 44, 4). Rowlands has distinguished the British examples as bracelets apart from the more massive 'arm-rings'; he considers that the wire bracelets are smaller versions of the twisted rod ornaments. The continental comparison of the recurved wire bracelet in the Barton Bendish hoard have been considered by Butler (1963a, 143-144). The only Nordic example is in the Steenode hoard (Kersten and La Baume 1958, 60, 148, Taf. 80, 19; see p. 81-3) which also contains a twisted neck-ring with two decorated bracelets probably of western origin. In central Europe, recurved bracelets with plain terminals, Richter's Kneiting type, appeared in Reinecke C2 (1970, 129-131), while the Speyer type, with rolled terminals, appeared only during HaA (*ibid.*, 131-132). The Barton Bendish recurved bracelet may be of insular origin. The Sleenerzand burial is probably of MII date.

Tumulus bracelets or anklets. LIST 45

Both of the spiral ornaments are of later Tumulus date. The example in Laon (List 45, 1) is probably a Haguenau type (Schaeffer 1926, fig. 34, T), placed by Ziegert in his Zeitgruppe 3, Reinecke C1 (1963, 13). Rolled terminals are absent from spiral bracelets in Hesse (Richter 1970, Taf. 1-11) though recurved terminals occur. D-section spiral bracelets like the ?Limburg example (List 45, 3) are common in Hesse during Reinecke C (*ibid.*, 23-35) and also occur in the Haguenau Forest (Schaeffer 1926, fig. 71, C-E).

The Boulogne bracelet can be matched in several Tumulus contexts in south-western Germany (Torbrügge 1959a, 43, Abb. 12, 8-9; 1959b, 76-77); most finds belong to Reinecke C2. Mohen (1972, 451) claims that four examples were associated with a poppy-head pin in a barrow in the Schwaiggauser Forst, Ldkr. Regensburg, Bavaria (Torbrügge 1959b, Taf. 60, 34-38), but the pin is an isolated find from one barrow (*ibid.*, 193 no. 268A), while the bracelets come from two other separate barrows (*ibid.*, 191 no. 264, 193 no. 267). The Boulogne find is remote from the main area of distribution of bracelets with double spiral terminals which is around the upper Danube (Holste 1953b, Karte 10).

One object with double spiral terminals is known from Britain; this is the small bronze ring from the plough soil in the ditch of the long barrow at Skendleby, Lincs. (Phillips 1935, 69, fig. 13). This is probably not related to the Boulogne bracelet and parallels are difficult to find. Fragments of a bronze ring from the hillfort at Rainsborough, Northants. (Avery, Sutton and Banks 1967, 286-288, fig. 31, 158), have been reconstructed to resemble the Skendleby ring. The Rainsborough ring should be Early Iron Age and may be compared to a ring in a late Ha D burial from Château des Evêques, Lazer, Hautes-Alpes (von Eles 1967-68, 133, 155, fig. 29, 6; Courtois 1976, 716, fig. 2C, 4).

The bracelet or anklet from Emmer Dennen, barrow 6 (List 45, 4), is probably related to Tumulus examples (Richter 1970, 50-52; Eluère 1974, 546-549) but it has smaller terminals; north-west German examples have narrower bodies (Laux 1971, 66).

Spiral belt-hooks. LIST 45

Belt-hooks of round-section wire with spiral terminals occur in late Tumulus contexts in south-western Germany (Ziegert 1963, 10, Taf. 2) and in the Haguenau Forest (Audouze 1974, 232-234, fig. 3, 1-2, 4). The Fort-Harrouard example is probably of Haguenau origin (List 46, 1) while the Elp example appears to be south German (List 46, 2).

Finger-rings. LIST 47. MAP 21

Finger-rings occur in British MBA 2 hoards mainly in Wessex and Sussex, but also in East Anglia. Rowlands has distinguished three forms: simple, coiled and ribbed (1976, 96-97). The decorated coiled ring in the Blackrock hoard (List 47, 10) was compared to MIII examples from Mecklenburg by Piggott (1949, 116-117) and later included by Smith as part of her 'ornament horizon' (1959, 149, 159-160).

Some of the British rings are reused fragments. The twisted, ribbon and rectangular-section coiled rings in the Woolmer Forest and Edington Burtle hoards (List 47, 6, 8) are probably fragments of bracelets or neck-rings; one of the Woolmer Forest rings incorporates the terminal of a twisted neck-ring. The ribbed finger-rings (List 47, 2, 8-9) could be small examples of ribbed bracelets; two annular ribbed finger-rings, both undated, are known from north-western Germany (Bergmann 1970, Teil B, 46, Liste 150, Taf. 7, 9, Karte 59).

Bergmann regards annular rings as finger-rings and penannular rings as ear-rings; all dated examples are MII (ibid., 46, Liste 146-149, Taf. 7, 8, Karte 59). Laux places finger-rings, coiled, annular or penannular, in early MII (1971, 66-67). These rings may be of bronze or gold, with a variety of sections, but usually without ornament (ibid., 67 n. 155). There are two coiled rings of gold in the MII Sleenerzand burial (79) and gold wire ornament occurs in several Sögel burials (Kubach 1973b, 407-408 n. 32). The annular ring in the Weedinge burial (Liste 45, 16) is MII/MIII and the annular rings in the Veenenburg hoard (List 45, 17) are a little later. Finger-rings are more numerous in Mecklenburg than in north-western Germany, gold in approximately equal numbers to bronze (Schubart 1972, 31, 193, Liste 10). Coiled rings

appear in MII but most are MIII; decoration is rare. Of the rings cited by Piggott (1949, 117) only the example from Slate, Kr. Parchim, barrow I, grave 2, is coiled and that has transverse notched ornament (Schubart 1972, Taf. 65, B1) unlike that on the Blackrock ring (List 47, 10). Annular rings from Mecklenburg are more often decorated, they usually have a flat section; simple penannular rings appear to be unknown. The origin and chronology proposed by Piggott and accepted by Smith for the Blackrock ring appear to be unjustified. In southern Scandinavia coiled rings are common, annular and penannular rings are rare (Kersten n.d. (1935), 55-57, Beilage 12). As in Mecklenburg, coiled rings may be of thin wire, a form uncharacteristic of Britain. The coiled ring does not appear to have been predominant in north-western Germany. Some Nordic influence may have encouraged the use of coiled rings in Britain but this should have been MII rather than MIII in date. Coiled rings appear to have been rare in France, though there is an example in the Bronze Moyen III burial from Le Comb Bernard, Magny-Lambert, Côte-d'Or (Sandars 1957, 89). The simple penannular rings in the Villers-sur-Authie hoard (List 47, 15) could be a result of British influence but too much importance should not be attached to such simple objects.

It should be noted that some so-called 'finger-rings', e.g. the example from Maiden Castle (List 47, 3), are too large to be worn on the finger without discomfort and, for their proposed use as finger ornaments, they are large in relation to contemporary arm ornaments. Perhaps some were hair-rings?

Monkswood ornaments

The single sheet bronze cone from the Monkswood hoard, Somerset (Inv. Arch. GB42, 16) has been compared to examples from a MIII burial at Lütz, Kr. Lütz, Mecklenburg (Smith 1959, 150). Schubart has republished this burial (1972, 123-124, Taf. 110) and discussed these cones, which he calls Hütchen (*ibid.*, 35-36, Liste 15). These Hütchen are ornaments for clothing; they appear in MII but are most common in MIII. They have two lateral perforations, unlike the Monkswood ornament which has a single perforation at its apex. Hütchen with double perforations also occur in the Lüneburg area, but they are not closely datable (Laux 1971, 44-45); the conical form is derived from Hesse (Holste 1939, 78), where they occur in burials of Reinecke C date: Molzbach, Kr. Hünfeld (Richter 1970, 21, Taf. 81), Darmstadt-Arheilgen (*ibid.*, 56, Taf. 76A). Such ornaments are not common in France, though Burgess (1974, 315 n. 240) has pointed out the occurrence of an unperforated example in the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969, 62, fig. 20, 196). It should be noted that sheet bronze cones occur in the Early Bronze Age hoard from Migdale, Sutherland (Inv. Arch. GB26, 55-59; Britton 1963, 272, 275). There is a more elaborate sheet bronze clothing ornament from the Middle Bronze Age settlement site at Chalton, Hants (Cunliffe 1971, 11, fig. 5, 5); this should be related to the Monkswood ornaments and certainly not to Urnfield phalerae, as suggested by Rowlands (1976, 160).

The cast bronze terminals in the Monkswood hoard appear to be unique (Inv. Arch. GB42, 17-18). Tall cones of sheet bronze occur in the MII hoard from Priepert, Kr. Neustrelitz, Mecklenburg (Schubart 1972, 66, 139, Taf. 52,

D5-12), and there is another in the Malassis hoard (Briard, Cordier and Gaucher 1969, 62, fig. 20, 193).

The Monkswood cones appear to be no closer to the Mecklenburg cones than to the Tumulus cones of Hesse or the cones of north-western Germany. The Chalton ornament and the Monkswood cast terminals show insular originality which might account for the cones also.

Razors. LIST 48

Butler has discussed continental finds of tanged razors related to British Early or Middle Bronze Age forms (1963a, 115-117). There are two Dutch finds, one from the Sögel burial at Drouwen, and the other from Zeijen (List 48, 3, 5). The Drouwen razor should be related to Piggott's Class I (1946, 122-126) and the Zeijen razor, like the Fort-Harrouard examples (List 48, 1), to her class II (*ibid.*, 126-128). There are razors related to Class I from grave III, barrow 194, 'Ing Jongbunburg', Nebel, on the north Frisian island of Amrum (Kersten and La Baume 1958, 131, Taf. 85, 19), and a late MII coffin burial in a barrow at Nim, Skanderborg Amt, Jutland (Sylvest 1957; Butler 1963a, fig. 33, 2; pl. XIIIa). An early MII burial at Ehestorf, Kr. Bremervörde, Lower Saxony (Nowothnig 1958, Abb. 1, 6; Bergmann 1970, Teil A, 69 no. 22; Laux 1971, 68, 164 no. 4, Taf. 6, 6), contains a bifid razor: the palstave in this burial belongs to Zeitgruppe I (*ibid.*, 81, Taf. 6, 3) but the spearhead, belt-hook, bronze dagger and flint dagger are all Sögel types (*ibid.*, 68, 76, 88, 91, Taf. 6, 1-5).

Jockenhövel (1971, 37, Taf. 41A) has pointed out that these northern finds are nearer to the British razors than to central Europe and British razors are more numerous than similar northern or central European forms (*ibid.*, 32-33; Butler 1963a, 117). It is plausible to accept British origin or influence for the continental razors considered above.

Razors of central European form are known from Paris and Opheusden (List 48, 2, 4). The Paris razor belongs to the Onstmettingen type, tanged with a leaf-shaped blade bearing grooved or incised ornament (Jockenhövel 1971, 32-42, Taf. 41A). Finds are distributed sparsely from the Seine and Rhône to the middle Danube and all datable finds belong to Reinecke B. The Opheusden razor belongs to the Obermenzing type, notched, with an oval openwork handle having a ring terminal (*ibid.*, 54-64, Taf. 42A). Like the Dutch example, most have very worn blades. In Bohemia and eastern Bavaria the type belongs to Reinecke C, while in south-western Germany and on the Middle Rhine it is Reinecke D. There is a related group of early Urnfield razors from eastern France (*ibid.*, 62 n. 5). The Opheusden razor may be a late Tumulus import into the Netherlands, like the Weerdinge wheel-headed pins (List 33, 2; Jockenhövel 1971, 63), though an early Urnfield date cannot be excluded. British Middle Bronze Age razors appear to have been more influential in western and northern Europe than contemporary central European razors.

Tweezers. LIST 49

Two Dutch burials contain bronze tweezers (List 49, 2-3), but neither can be dated with great precision. In north-western Germany, the scarce finds

belong to MIII (Bergmann 1970, Teil B, 63, Liste 231, Taf. 13, 11, Karte 97), while in southern Scandinavia the broad form is MII and the narrow form MIII (Kersten n.d. (1935), 58-59, Taf. XVII, 6; XX, 4). The Nordic tweezers are probably derived from central Europe, where they seem to have appeared during Reinecke C1 (Hachmann 1957, 145; Torbrügge 1959a, 40, Abb. 11, 3, 8; Gerloff 1975, 126). A late Middle Bronze Age date seems likely for the Dutch finds, though they may be more recent. The tweezers from Fort-Harrouard should be dated to later Bronze Moyen by the associated decorated bracelet (List 49, 1).

MBA: SUMMARY

Arreton flanged axes, characteristic of the later Early Bronze Age in southern Britain, are also known from northern France and Belgium. In France these axes occur in contexts of early Bronze Moyen, together with haft-flanged axes and shield-pattern palstaves. The use of Arreton axes can also be equated with the Sögel and Lochham phases of northern and central Europe. Related Dutch axes of Ekehaar type were probably derived from north German forms. Arreton axes appear to have been current in southern Britain while early shield-pattern palstaves were in use in Tréboul, Lochham and Sögel contexts, as well as in the Acton Park complex of north Wales; local production is likely in all these areas, though Acton Park palstaves were exported to the Netherlands. Contemporary Nordic palstaves are found only as far west as the Dutch border.

The palstaves discussed above belong to MBA1; during MBA2 palstaves were produced in large quantities in northern France and southern Britain. About sixty hoards in Brittany contain predominantly palstaves of Breton type; in north-eastern France about one hundred hoards are known, most in the lower Seine valley containing palstaves of Norman type. The few palstave hoards from Picardy contain mainly broad-bladed palstaves related to British forms. Some Breton palstaves occur in north-eastern France, Belgium and the southern Netherlands; British finds rarely occur in characteristic MBA2 hoards. Norman palstaves are also scattered through north-eastern France and Belgium; in Britain they are common in the large MBA2 hoards on the south coast, especially Hampshire and Sussex opposite Upper Normandy. Broad-bladed palstaves, like those of Picardy and southern Britain, occur in Belgium and the southern Netherlands. Local types in these areas, related to north-west German forms, occur in the lower Meuse area and in the north-eastern Netherlands. The palstave was the dominant tool-type of southern Britain during MBA2; there is a distinct regional group in south-west England and a larger, more heterogeneous, group in south-east England. About seventy hoards are known in this south-eastern group and about 30% of the palstaves in these hoards occur in only four hoards on the south coast. About 10% of the palstaves in these hoards are imports, mostly Norman. Apart from the central south coast, the other centre of palstave distribution is on the south-eastern margins of the Fens, but hoards are rare in this area. Local forms can be identified, e.g. the Isle of Wight type.

Influence from Upper Normandy on the south coast must have been strong and it does not appear to have been reciprocated, for British palstaves are

rare in Norman hoards. British palstaves, especially forms common in Kent and Sussex occur in Picardy, Belgium and the southern Netherlands.

Palstaves were superseded by short-flanged axes in northern Britain. Welsh palstaves of MBA2 reflected southern British forms. Middle Bronze Age axes of any form are not common in central midland England. Southern and eastern England had more in common with the continent than with other parts of Britain and Ireland.

Looped socketed axes appeared in Britain during MBA2, derived from northern Germany; one example was exported to the Netherlands. The contemporary appearance of socketed hammers and anvils was probably of French inspiration. Knobbed sickles, a Somerset type in Britain, could have been derived from northern Germany, but a French origin is also possible.

Looped spearheads were characteristic of Britain during the Middle Bronze Age. The side-looped type, known already during the Early Bronze Age, occurs in Tréboul contexts and was presumably current during MBA1 in southern Britain as well as MBA2. Side-looped spearheads are common in north-eastern France and are also known in Belgium and the Netherlands. Tréboul spearheads are found east of Brittany as far as the northern Netherlands but are absent from Britain. Basal-looped spearheads with leaf-shaped blades are not attested before MBA2; their continental distribution is similar to that of side-looped spearheads and it is possible that basal-looped spearheads were produced in the lower Seine valley. Pegged spearheads are known in MBA2 hoards in north-eastern France and are also found in Belgium; the only British example is in the LBA1 Orsett hoard. Dutch finds represent the western edge of the distribution of spearheads of the Nordic earlier Bronze Age. There are a few central European spearheads contemporary with MBA from the Netherlands and north-eastern France.

The latest daggers of the British Early Bronze Age were influenced by Tréboul-Saint-Brandan swords and the first insular rapiers were also produced during MBA1 contemporary with Sögel and Wohlde swords and the Lochham phase. Tréboul swords occur in north-eastern France, Belgium and the Netherlands, while Sögel and Wohlde swords are absent from Britain. The appearance of bronze triple U-shaped hilts during MBA1 probably reflects central European influence. Derived from Tréboul swords, Plougrescant-Ommerschans swords reflect the same link between Brittany and the Netherlands as Tréboul swords and spearheads, though they may be later than MBA1; there is a single English example. There are a few Tumulus swords and daggers from western Europe, especially north-eastern France. There is a Nordic MII sword and a contemporary chape from north-eastern France. Trapezoidal-hilted rapiers are characteristic of northern France and Britain and are also found in Belgium and the Netherlands; they were probably most common during MBA2.

Some of the pins from Camerton-Snowhill burials of later Early Bronze Age in southern Britain appear to be contemporary with the early Tumulus Lochham phase but early Tumulus pins of central European origin appear to be confined to the continent. Picardy pins were influenced by early Tumulus forms but associated finds are unknown before MBA2; Picardy pins and their

derivatives are common in north-eastern France and southern Britain. Pins with long ribbed heads found in north-eastern France are derived from a Haguenau type; there are miscellaneous late Tumulus pins from north-eastern France. Dutch finds of wheel-headed pins are of contemporary date, probably of middle Rhine origin. Nail-headed pins and roll-headed pins were probably still current in the Netherlands at this time. Disc-headed pins with looped or perforated straight shafts occur in Britain and north-eastern France.

Twisted neck-rings are a characteristic MBA 2 type in southern Britain, probably derived from Nordic MII forms; there is a single example from north-eastern France, while Belgian examples are probably of LBA1 date.

Bracelets with complex incised decoration are characteristic of northern France and common southern England during MBA2. The insular finds were probably local products. There is one decorated bracelet from Belgium. British finds of bracelets with longitudinal ribs are probably related to French, rather than Nordic, forms. None of the other types of bracelet current in Britain during MBA2 need have been derived from the Nordic area. There are a few late Tumulus bracelets from north-eastern France, Belgium and the Netherlands and Tumulus belt-hooks are known in north-eastern France and the Netherlands.

There are razors of British origin in western and northern Europe and Tumulus razors from north-eastern France and the Netherlands. Bronze tweezers, derived from Tumulus models, occur in the same areas as Tumulus razors.

The dominant theme of the Middle Bronze Age is the strength of relations between north-eastern France and south-eastern Britain demonstrated by tools, weapons, ornaments and hoards. Relations with the Nordic area were not as extensive as has previously been supposed, especially relations represented by ornaments. The western edge of the distribution of Nordic types is usually represented by the eastern Netherlands and only twisted neck-rings and socketed axes can certainly be identified as British types inspired by Nordic models.

CHAPTER 4

LATE BRONZE AGE 1

LATE BRONZE AGE 1

LBA1 is the Penard phase of Burgess (1974, 205-207), MBA3 in Hawkes' chronology (1960, 5). Hawkes' short phase (Burgess 1968a, 3) can now be seen to cover three phases of central European chronology: Reinecke D, Ha A1 and Ha A2 (Burgess 1976a, 72-73; Jockenhövel 1975) and a distinction can be made between material which need be no later than Reinecke D, e.g. the Dover hoard (108), and types which should be Ha A2, e.g. leaf-shaped flange-hilted swords (see p. 130-1).

Burgess has pointed out the close relations between the Penard phase and Briard's Bronze Final I Rosnoën phase in Brittany (1968a, 3-9) and it appears that this phase lasted to Ha A2 in northern and western France, as in Britain (see p. 31). Large palstave hoards were no longer deposited during LBA1 and, on both sides of the Channel, MBA2 industries disappeared. These abrupt changes encourage me to adopt the term 'Late Bronze Age' for this phase in southern Britain, to avoid the discrepancy in terminology, remarked on by Jockenhövel (1975, 147), between Bronze Final I and Middle Bronze Age 3. It should also be noted that the Penard hoard (107), with its leaf-shaped swords, probably belongs to the later part of LBA1; the Dover hoard (108) is a better representative of early LBA1 in southern Britain.

TOOLS

Palstaves. LIST 50. MAP 23

When she defined the palstave type transitional between Middle Bronze Age and Late Bronze Age in southern Britain, Smith instanced the examples from the Crediton (5) and Grunty Fen (103) hoards (1959, fig. 7, 2-3). I have shown that the Crediton palstave and two of the Grunty Fen palstaves are Norman MBA2 types, though the Grunty Fen examples are less characteristic and their fellow (103, 3), with midrib rather than trident ornament, is probably an insular type. More detailed study will be necessary to separate 'transitional' palstaves (Burgess 1974, 216, fig. 31, 5; Rowlands 1976, 37-38) from MBA2 types, especially looped Norman palstaves.

Apart from Grunty Fen, several LBA1 hoards contain palstaves, some of which are included by Rowlands in his Class 5/1, broad-bladed looped palstaves (1976, 34-35, pls. 30, 394-595; 31, 448-688). Palstaves with loops and midrib ornament occur in the hoards from: Ffynhonnau (102), Orsett (105), Southchurch (106), Downham (110) and Ambleside (112), as well as the hoard from Burringham ('Isle of Axeholme') (Davey 1973, 94, pl. XII). None of these needs be an import: all in the Dover hoard (108) could be of continental origin. Such 'transitional' palstaves are also common in hoards of the Wallington phase in northern England (Burgess 1968b, 7-14). Reassessment of the socketed axe in the Carr Moorside hoard, Yorks. (ibid., 60 no. 9, fig. 8, 4; 1976a, 69-71) suggests that this phase may not be confined to LBA2. The looped palstave with more or less broad blade and tapering midrib appears to have been current throughout LBA1 in southern Britain but in much smaller numbers than the palstaves of MBA2.

In northern France, especially in Brittany, palstave development was not dissimilar. Briard recognised the Rosnoën palstave type, characteristic of Bronze Final I, though continuing into Bronze Final II (1965, 155-157, fig. 50, 1-4; Briard and Verron 1976a, 105-108; Burgess 1968a, fig. 4, 10). These palstaves are looped, massive, with straight or slightly expanded sides, straight stopridges and usually bearing a thick midrib. Their maximum length, 19 cm, is well in excess of that of Bronze Moyen palstaves. While less numerous than preceding palstaves, Rosnoën palstaves were the dominant Bronze Final I axe type in Brittany and Anjou (Cordier and Gruet 1975, 259).

Rosnoën palstaves are not common elsewhere though two large groups could occur at Dover (108) and La Vaquerie (117). A few are known in central and south-eastern France: Longueville hoard, Seine-et-Marne (Lamarre 1945, 105-107, fig. 4, 12); Mercurey, Saone-et-Loire (Bonnamour 1969, 15 no. 20, pl. V); the Saone (ibid., 14 nos. 17, 19, pl. IV); Lons-le-Saunier hoard, Jura (Millotte 1963, 310 no. 273, pl. XII, 24-25). The Reinecke D hoard from Windsbach, Ldkr. Ansbach, Franconia, contains what is probably a Rosnoën palstave (Müller-Karpe 1959, Taf. 155, 4). Palstaves were superseded by median-winged axes in eastern France (see below); neither of the hoards from Cannes-Ecluse, Seine-et-Marne, contains a palstave (Gaucher and Robert 1967). The same may have been true in Belgium and the southern Netherlands, though the terminal date of Lower Meuse palstaves is unknown. It is unfortunate that typological details of the palstaves in the Dover hoard (List 50, 1) have not been preserved but the size of many examples suggests that a Rosnoën origin is possible. Nevertheless, I know of no other certain example of a Rosnoën palstave in Britain.

Median-winged axes. LIST 51. MAP 24.

The median-winged axes of France have been studied by Millotte, Cordier and Abauzit (1968; Briard and Verron 1976b, 13-16). These axes are usually massive, with straight sides, short wings and a notched butt. Their distribution in France is predominantly west-Alpine with extensions north into Lorraine and north-west into the Seine and Somme valleys; there are a few examples from central France, but finds in the north-west, west and south are rare (Millotte, Cordier and Abauzit 1968, fig. 2). There is a mould from central France at Saint-Aignan, Loir-et-Cher (ibid., 42, no. 81).

Median-winged axes appeared in central Europe during the late Tumulus period (Jockenhövel 1975, 136-137) and in east central Europe during Reinecke C, becoming common in Reinecke D and Ha A1, surviving into Ha B (von Brunn 1968, 80-82, Abb. 8-9). These axes are not of the same form as the western type; the massive straight-sided examples illustrated by von Brunn (ibid., Abb. 8, 13, 15) are western examples from Oberkulm and Stockheim noticed below (p. 97). Von Brunn's claim that the axe from Sabenice, northern Bohemia (ibid., 80, Abb. 8, 11), is a western type is not convincing. Further east, median-winged axes from Slovakia and Romania do not belong to the western type (Novotná 1970a, nos. 267-323; Vulpe 1975, nos. 375-439). Neither are the median-winged axes from Greece and Italy of western form (Müller-Karpe 1959, Abb. 9, Taf. 13, 12; 103, 34-40).

In the eastern Alps and Bavaria, median-winged axes are characteristic of Reinecke D (*ibid.*, 108, Abb. 22, 19; 149, Abb. 23, 32-33) but only north of the Danube do massive axes with straight sides occur. Two hoards from Franconia contain such axes with western types and early Urnfield types: Windsbach, Ldkr. Ansbach (*ibid.*, 147, Taf. 155A, 4, 7, 8, 18), and Stockheim, Ldkr. Gunzenhausen (*ibid.*, 147, Taf. 157, 59-61, 64-67, 74-76; Kubach 1977, 420 n. 70). The transitional Reinecke D/Ha A1 hoard from the Rhine at Mainz contains median-winged axes among a similar mixture of west and central European types (Kubach 1973a, Abb. 1, 1-3, 24-26; Schauer 1971, 71). The west-Alpine distribution of median-winged axes reaches into Switzerland (Millotte, Cordier and Abouzit 1968, fig. 2). Axes of western form appear in early Urnfield hoards from Oberkulm, Aargau (Müller-Karpe 1959, 176, Taf. 162B, 3), and Aesch, Baselland (Primas 1971, 62-63, Abb. 11, 1-2), but other forms of median-winged axe are also known (Frei 1971, 89, Abb. 4, 2-3).

In France, median-winged axes occur in Bronze Final I and II contexts (Millotte, Cordier and Abouzit 1968, 17-19; Briard and Verron 1976b, 15). They occur from the Bronze Final I/Reinecke D phase in the Alps (Bocquet 1976, 487) and in Bronze Final I hoards in the Paris Basin (Gaucher 1976, 580). A single butt fragment in the Malassis hoard, Cher, indicates their appearance in central France at the beginning of Bronze Final I (Briard, Cordier and Gaucher 1969, 48, fig. 8, 24). A few examples are found in Bronze Final I hoards in Brittany, where the Rosnoën palstave was the dominant axe type (Briard 1965, 157, fig. 50, 5-7). The presence of Wollmesheim pins with median-winged axes in the hoards from Champbertrand, Yonne (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 177-185, figs. 15-16, 115), and La Rivière-Druegon, Doubs (Millotte, Cordier and Abouzit 1968, 32 nos. 39-41), indicates a date early in Ha A (Kubach 1977, 420, 441, 443, 449). Kubach's reluctance to date these hoards late is belied by the fact that median-winged axes occur with Ha A2 knives in the hoards from Longueville (Lamarre 1945, 107, fig. 2, 13-15) and Cannes-Ecluse I (Gaucher and Robert 1967, 173-175, figs. 5-10) (see p. 99-100). None of the associations from north-eastern France: Saint-Chéron, Anzin, Saint-Just, Saint-Léonard and Erondelle (List 51, 7, 9, 12, 17, 22) need be later than Bronze Final I/Reinecke D and this date should also apply to the Dover hoard (List 51, 1).

Since median-winged axes are not common beyond the Seine, though one has been found as far away as south-eastern Spain at Arroymolinos, Jaén (Menéndez Pidal 1947, fig. 620), it seems probable that the examples in the Dover hoard, and the axes from Thames Ditton and Hull (List 51, 2-3), were imported from north-eastern France. The median-winged axe from Sketty, Glamorgan (Williams 1937, fig. 1; Burgess 1968a, fig. 4, 5), is made of a modern alloy (J. P. Northover), though presumably copied from an ancient axe.

Desittere has listed finds of median-winged axes in Belgium, the southern Netherlands, Luxemburg and the adjacent parts of Germany (1974a, Liste 2, carte 2). Most examples appear to conform to the French type with straight sides. The distribution is mainly confined to the valleys of the Moselle, Meuse and Rhine. Only two Belgian axes with reliable provenances (List 51, 24-25) occur west of the Meuse valley. Butler considers that the Dutch finds were probably imports (1973b, 330). There are multiple finds in the lower Meuse

valley at Neeroeteren (122) and Swalmen (126). Dutch examples appear to be absent north of the Rhine valley (Butler 1973b, 330) and finds are sparse in north-western Germany (Tackenberg 1971, 7-12, Karte 2) and in Denmark (Thrane 1972a, 79-83). These Nordic examples do not appear to have been of western origin, unlike the Dutch and Belgian axes; these may have been derived from the eastern part of the French distribution via the Moselle and Rhine (Desittere 1974a, Liste 2, carte 2).

Socketed axes. LISTS 52-53. MAP 25.

The socketed axe in the Penard hoard (List 52, 20) belongs to Burgess' Penard-Trawsfynydd type (1962a, 21-23; 1968a, 35), derived from the Taunton-Hademarschen type and closer to it than to the rare socketed axes in Wilburton hoards (see p. 134). The Penard hoard belongs to the later part of LBA1; socketed axes occur in the early LBA1 hoards from Dover and Orsett (List 52, 5, 8).

Looped socketed axes, some of which may belong to MBA2 rather than LBA1, are most common in Britain in East Anglia (Map 25). Such axes are rare on the continent (List 52, 25-27). The Brasles axe appears to be unique. The Flanders axe may be compared to the Cambridge area axe (List 52, 2) and is probably a British export. The axe in Rouen has no collar moulding; its proportions are similar to those of the looped axe in the Dover hoard (List 52, 8) and the Kingoldrum axe (List 52, 24). The appearance of a looped axe in the Dover hoard, alongside so many objects of probable continental origin, is puzzling in view of the preponderance of looped axes in Britain.

Unlooped socketed axes, or chisels, appeared in Britain during MBA2 in the Highworth hoard (38). They occur in Brittany in the Bronze Final I hoards from Kergoff en Noyal-Pontivy, Morbihan (Briard 1965, 157, fig. 52, 4; Nicolardot and Gaucher 1975, 123, fig. 20), and Condé-sur-Noireau, Calvados (Verron 1976a, figs. 3, 9). The Pontavert axe could be of this phase or even earlier (see p. 277-8).

Ring-socketed sickles. LIST 54.

These sickles form part of Group I of Fox's classification of British socketed bronze sickles (1939, 223); they are hafted by means of a cylinder, usually open, sometimes closed at one end, from which the blade springs laterally. Five examples are known from Britain (List 54, 1-5) and five from Ireland (List 54, 6-10). The earliest British association is the LBA1 hoard, probably early because of the straight-bladed rapier, from Downham Market (110); the other associated find is in the LBA2 Isleham hoard (127). The chronology of Irish ring-socketed sickles is uncertain (Herity and Eagan 1977, 183, fig. 76, presumably Class Ia), though Burgess seems to suggest that they appeared as early there as in Britain (1968a, 4).

The only French example of a ring-socketed sickle known to me is in the Plainseau hoard (List 54, 11); this is distinguished from British sickles by its asymmetrical blade and looped socket (Nicolardot and Gaucher 1975, 99-100, fig. 1). Burgess has suggested (1974, 205 n. 266) that Cannes-Ecluse hoard I, Seine-et-Marne, contains fragments of ring-socketed sickles (Gaucher and Robert 1967, 200-202, fig. 41, 3, 12). The first is a hexagonal socket

with an expanded lateral projection and the second a round socket with two lateral shafts, one hooked; both are probably flesh-hooks (Jockenhövel 1974a, 329 n. 2). The only likely example of a British ring-socketed sickle on the continent is in the hoard from Argonil, Portugal (de Castro Nunes 1957, 138-142, figs. 5-6; see p. 55).

Early Urnfield knives. LIST 55. MAP 26.

Nicolardot and Gaucher have provided a valuable study of Urnfield knives in France (1975, 49-87). Several early Urnfield types are absent from north-eastern France: the Riegsee type (*ibid.*, 53-54), socketed knives with separate metal terminals (*ibid.*, 63-64) and Courtavant knives (*ibid.*, 73-74). There is no Urnfield knife certainly of Reinecke D/Bronze Final I date from north-eastern France, the Low Countries or Britain. There are, however, several knives of Ha A date from these areas, i.e. later LBA1; these normally occur in Bronze Final II contexts in France. Knives from the succeeding Ha B1/Bronze Final IIb phase will also be considered here; these belong to LBA2 but are very close in form to knives of the preceding phase and it is not always possible to distinguish the chronology of isolated finds.

Tanged knives with a convex back, apex near the centre, appear in central Europe in Ha A1 (Müller-Karpe 1959, Abb. 30, 9-10; 38, 1; 39, 8-9) and are also characteristic of Ha A2 (*ibid.*, Abb. 37, 12-13). Perforated tangs are known in Ha A1 (*ibid.*, 153, Taf. 182A, 3; 182B, 5; 182D, 5), while hooked tangs do not occur until Ha A2 (*ibid.*, 153, Taf. 184F, 1). Ornamental motifs sometimes occur on the back of the blade at the junction with the tang (*ibid.*, Taf. 182E, 1). Similar knives occur during Ha A in Hesse (Hermann 1966, 30, Abb. 5, 9-10, 17-18); again, the hooked tang appears to be absent from Ha A1. In the Saar-Moselle region the perforated tang is known from Reinecke D (Kolling 1968, 86, Taf. 33, 5), though this group of objects from Kleinblittersdorf, Kr. Saarbrücken, may not be a closed find (Kubach 1977, 424 n. 18, 441), and from Ha A1 (Kolling 1968, 87, Taf. 32, 8). Ha A2 knives are more slender, with flatter backs and plain tangs (*ibid.*, 87, Taf. 12, 9; 39, 11). All these knives are undecorated. A stone mould from Preist, Kr. Bitburg (*ibid.*, 79-80, Taf. 65) contains a matrix for such a knife with one for a Ha A2 razor (Jockenhövel 1971, 131). Ha A2 knives with perforated and hooked tangs occur in the Neuweid basin (Dohle 1970, 120, Taf. 18, 9-12; 25, 3), e.g. Heimbach-Mittelweg, Kr. Neuweid (*ibid.*, 256 no. 197; Desittere 1968, 12, figs. 9, 11; I, 7; Jockenhövel 1971, 106-107 no. 155, 110). Early Urnfield knives are rare in north-western Germany (Tackenberg 1971, 105-107, Karte 19-20).

Slender tanged knives appear in Alsace only during Bronze Final IIb (Zumstein 1966, 50-52, fig. 8, 65, 166; 1976, 639, pl. III); both hooked and perforated tangs are known. In Champagne there are two tanged knives with ornamented backs from graves 1 and 2, Group Z, cemetery 1, Aulnay-aux-Planches, Marne, one with a hooked tang and one with a perforated tang (Brisson and Hatt 1953, 205, fig. 43, 1, 7; Nicolardot and Gaucher 1975, 61, fig. 2; Chertier 1976, 144, fig. 35, 9-10). Müller-Karpe dated both these knives to Ha A2 (1959, 175 n. 1). Nicolardot and Gaucher place both forms in Bronze Final II (1975, 59, 61). Cannes-Ecluse hoard I, Seine-et-Marne, contains two fragments of similar tanged knives (Gaucher and Robert 1967,

185-187, figs. 21-22, 23, 1-2), the first with a single perforation and ornamented back, the second with double perforation and ornamented blade faces. The first knife is similar to the knife with a perforated tang from Aulnay-aux-Planches. The blade ornament on the second Cannes-Ecluse knife can be matched on Ha A2 knives from Switzerland (Ruoff 1974, 27, Taf. 35, 2-6). Jockenhövel (1971, 91 n. 1) has identified in the Cannes-Ecluse I hoard the handle of a Ha A1 razor of Morzg type (Gaucher and Robert 1967, fig. 26, 9). The Cannes-Ecluse hoard was originally dated 'au début du Bronze Final' (ibid., 212) but it is clearly later (Eluère 1974, 560; Richter 1970, 106 n. 15; Reim 1974a, 47-48 n. 1; Jockenhövel 1971, 94-95; Schauer 1971, 73 n. 7; Kubach 1977, 403 n. 34, 446 n. 186). Blade fragments which could belong to Ha A knives also occur alongside Bronze Final I types in the hoard from Longueville, Seine-et-Marne (Lamarre 1945, 108, fig. 4, 23-25; Eluère 1974, 560).

In north-eastern France there are Ha A knives with perforated tangs from Essonne, Seine near Paris and Chevilly-Larue (List 55, 8, 11, 13), while the first knife from Wichelen probably had a perforated tang (List 55, 16). The form of the Han knife (List 55, 20) can be matched in Ha A2 (Müller-Karpe 1959, Abb. 37, 13) and a similar collar occurs on a knife with a hooked tang from Nieder-Rosbach, Kr. Friedburg, Hesse (Hermann 1966, 123 no. 373, Taf. 115C, 1). Only the ? London knife (List 55, 2) has a hooked tang, though the tang of the Ffynhonnau knife was probably hooked rather than perforated (List 55, 1). The first knife from Melle lacks its tang (List 55, 14) but should be contemporary with the preceding examples. All these knives should be of Ha A date, probably Ha A2 rather than Ha A1.

There are knives with plain tangs from: Brasles, Boutigny hoards I and II, Corbeil, Morsang-Saintry, Combon, Paris, Melle, Wichelen, Bargerroosterveld 1899 and 1900 hoards and Odoornerveen (List 55, 3-7, 9-10, 15, 17, 20-22). The decorated examples from Brasles, Boutigny II and Morsang-Saintry (List 55, 3, 5, 7) probably belong with the Ha A group discussed above. The plain examples are more difficult to date; French examples occur in Bronze Final II and III (Nicolardot and Gaucher 1975, 51, 55) and may be related to the heterogeneous Stillfried type of Ha A2 and Ha B1 (Rihovský 1972, 55-58). Müller-Karpe places plain tanged knives in Ha B1 (1959, 165, Abb. 41, 11; 42, 15-16). Hoard finds from Boutigny, Combon and Bargerroosterveld suggest dates later than LBA1.

There remain the flange-hilted knives from Paris and Tournai (List 55, 12, 18). In central Europe flange-hilted knives occur from the early Urnfield period to Ha B1 (Rihovský 1972, 23-41), those without a ring terminal belong mainly to Ha B1 and MIV (Thrane 1972b, 198-208, 225-226, Fundliste 2). Our examples are probably related to the miscellaneous French group of Bronze Final II/III (Nicolardot and Gaucher 1975, 69).

WEAPONS

Pegged spearheads

Pegged spearheads were known in the British Early Bronze Age (Burgess 1974, 193) but are absent from Middle Bronze Age contexts, reappearing in the Penard phase (ibid., 205; 1968a, 34 n. 6).

Recent finds throw new light on the appearance of pegged spearheads in Britain during LBA1. The Orsett hoard (105) contains an ogival-bladed spearhead (List 21, 17) probably of French Bronze Moyen origin. The Dover hoard (108) contains two spearheads; the more complete example has the long socket characteristic of Rosnoën spearheads of Bronze Final I (Briard 1965, 157, fig. 51). Both of these hoards belong early in LBA1. Another link with France is provided by the pegged spearhead with ridged blade in the the Rosnoën hoard (Briard and Giot 1958, pl. II, 6). Ehrenberg (1977, 9) shows that ridged blades occur on MBA leaf-shaped basal-looped spearheads, but also found in the Eglwyseg hoard (104) on a pegged spearhead. These finds suggest French influence for pegged spearheads and occasional imitation of the blade form of looped spearheads. There are plain spearheads without loops in the hoards from Penard (107), Appleby (109) and Worth, Devon (Burgess 1968a, fig. 3, 7b-c); the examples from Penard and Appleby and the smaller spearhead from Worth all have similar proportions and lengths, c. 20 cm. The Penard and Worth hoards belong to later LBA1 because of their Ballintober swords.

In north-eastern France there are pegged spearheads in the Saint-Just-en-Chaussée hoard (115), blade fragments in the Choisy-le-Roi hoard (120) and pegged spearheads from the La Vaquerie find (117), all of Bronze Final I. These are usually regarded as Rosnoën spearheads. Isolated finds of spearheads with long sockets, attributed to Bronze Final I, include: Seine between Morsang and Saintry, Essone (Toulouze 1891, figs. 25, 27), Fort-Harrouard, Eure-et-Loir (Phillippe 1936, fig. 50, 31), Oise at Compiègne (Blanchet and Lambot 1975, 37 no. 16, fig. 15) and Seine at Pont-Saint-Michel, Paris (Mohen 1968, 796 B78a, pls. VI, VII).

Few Rosnoën spearheads have been identified in the Low Countries and it should be noted that long sockets are also characteristic of Nordic spearheads of Lüneburg type I of MIII and MIV (Jacob-Friesen 1967, 177-183, Taf. 92-93). A spearhead from Drenthe (*ibid.*, 379 no. 1726, Taf. 112, 8) has a ridged blade like the Rosnoën and Eglwyseg examples mentioned above. A spearhead from Denderwindeke, E. Flanders, with a long socket lacking rivet-holes (Desittere and Weissenborn 1977, 30 no. 31, fig. 16) has been compared with Saxo-Thuringian MIV spearheads which sometimes have no peg-holes (*ibid.*, 29; Tackenberg 1971, 66-69, Liste 41c).

Straight-based basal-looped spearheads. LIST 56. MAP 27

A chronological distinction between basal-looped spearheads with leaf-shaped blades and those with straight-based, more or less triangular, blades has been made by Burgess (1968a, 35 n.8). The former are Middle Bronze Age while the latter appear only in the Penard phase. These spearheads (Rowlands 1976, 58-60, pl.40, 1513-1585, map 17; Ehrenberg 1977, 11-12) vary considerably in size. Schauer (1973) has used Burgess' illustrations (1968a, fig. 5, 1, 3) as eponyms for the large Enfield type and the small Kergoustance variant.

LBA1 associations of straight-based basal-looped spearheads in Britain are the hoards from Appleby (109), Ambleside (112), Burringham, Lincs. (Davey 1973, 94 pl.XII), and Maentwrog, Merioneth (Inv. Arch. GB10, 4); both of the latter hoards also contain notched rapiers (Burgess 1968c, 25 nos. 17-18) and probably belong to early LBA1. Such a date is also indicated

by the spearhead in the Bronze Final I hoard from Kergoustance, Finistère (Briard 1965, 157, Fig. 51, 4), and by the possible association with a Buchloe-Greffern sword of Reinecke D at Greffern, Lkr. Rastatt, Baden-Württemberg (Schauer 1974a). There is a more doubtful association at La Chaussée-Tirancourt (List 56, 9) with a Pépinville sword, also of Reinecke D.

The continental distribution of straight-based spearheads is widespread (Schauer 1973, Abb. 2) but is concentrated in the Seine valley with other centres in the valleys of the Somme, Scheldt and lower Rhine (Map 27) outweighing the distribution in western France. The southern British distribution of these spearheads is mainly confined to the Thames valley, the Cambridge Fens and the east Midlands (Rowlands 1976, map 17).

Conical ferrules. LIST 57.

Conical ferrules have been recognised as continental in origin by Coles (1959-60, 24 n.6) and Butler (1963a, 133). Sprockhoff dated them to MIV in central Germany where they constituted a Leitform of his Kulturprovinz an der Mittelelbe (1937, 30-31, Abb. 21, 10) and occurred most commonly in burials in the lower Saale area (von Brunn 1954, 35). More recently, von Brunn has emphasised this restricted distribution and criticised their use as type-fossils, für eine grosse Kulturprovinz im Elbegebiet, (1968, 227). Conical ferrules from this region are of Ha A2 date: Kolno, Kr. Schönebeck (von Brunn 1954, Taf. 9; 1968, 299), Köthen, Kr. Köthen, grave 1 (1954, Taf. 2; 1968, 306), though earlier finds are known from east central Europe at Lhotka, Prestavlký and Svinárky in Bohemia (Jockenhövel 1975, 142 n.90; Richlý 1893, Taf. 17, 33), Reinecke D or Ha A1 (von Brunn 1968, 301-302).

Conical ferrules are associated with pegged spearheads in central Germany (von Brunn 1954, Taf. 9, 1, 5), but there is no evidence for any connection with the appearance of pegged spearheads in Britain.

If the derivation of conical ferrules from central Germany is accepted, British hoards which contain them should be of late LBA1 date. This is assured for the Ffynhonnau hoard (List 57, 4) and not excluded for the Ambleside hoard (List 57, 8). An earlier date would appear to demand direct contact between Britain and Bohemia; a Ha A2 date would be followed directly by Ha B1 phalerae from the same area (see p. 149).

Tanged arrowheads. LIST 58. MAP 28.

Bronze tanged arrowheads, usually barbed, are more common in north-western Europe than Mercer's survey (1970, 190-194, 206-208, fig. 5) suggests. He omits the Sögel finds (List 58, 20-21), listing the Sleenerzand arrowheads as socketed (1970, 209 no. 103).

There are numerous tanged arrowheads from Fort-Harrouard and Han (List 58, 7, 19) and several examples from the Scheldt (List 58, 16-17) but these finds cannot be dated closely. The pair from Moislains (List 58, 15) were said to be found in a Merovingian burial, but Merovingian arrowheads were normally made of iron and few are known from Gaul (Todd 1972, 118; Böhme 1974, 110). The Penard hoard (List 58, 2) should belong to later LBA1.

Tanged arrowheads were common in south German Tumulus burials (Mercer 1970, 193) in Reinecke B contexts: Unterbuchfeld, Ldkr. Neumarkt (Torbrügge 1959a, 64 no. 58; 1959b, 140 no. 109, Taf. 27, 4), Mantlach barrow 2, Ldkr. Parsberg (*ibid.*, 95, 167 no. 194B, Taf. 43, 51-52). There are also examples from the Reinecke C1 burial at Ponholz barrow 1, Ldkr. Regensburg (*ibid.*, 195-196, no. 280, Taf. 57, 20; Schauer 1971, 43). Spurred arrowheads, to which those from Hijken (List 58, 20) may be related, occur in the eponymous Reinecke B group at Lochham, burial 1, barrow X, Ldkr. München (Inv. Arch. D14, 4; Torbrügge 1959a, 63 no. 48; Mercer 1970, 188).

Further west, finds of tanged arrowheads appear to be of early Urnfield date: Wangen an der Aare, Bern, Reinecke D (Schauer 1971, 79 no. 262, 80, Taf. 134D, 21); Hart an der Alz, Ldkr. Altötting, Bavaria (Müller-Karpe 1959, 156 n.4), Wollmesheim, Kr. Landau, Rheinland-Pfalz (Krahe 1960, Abb. 6, 7-10), Ha A2 (Schauer 1971, 170); Hennef-Geistingen, Siegkreis, Rhineland (Cowen 1955, Abb. 8, 7), Ha B1 (Schauer 1971, 172). There is less dating evidence for arrowheads in adjacent parts of France (Mercer 1970, 192), though there is a barbed and tanged arrowhead in a Bronze Moyen III burial from Eguisheim, Bas-Rhin (Zumstein 1976, pl. I, 5). In view of the later LBA1 date of the Penard hoard, the Wollmesheim association of tanged arrowheads with a Ha A2 Erbenheim sword (Schauer 1971, 168 no. 509), also a type which reached Britain (see p. 110), indicates that a Ha A2 Rhineland origin may tentatively be suggested for the Penard arrowhead (List 58, 2).

There are two tanged bronze arrowheads from England in addition to the two mentioned by Mercer (1970, 192, 213 no.s 267, 269). One is from Eriswell (List 58, 3) and the other is from the ditch of Bokerly Dyke (List 58, 1); H. C. Bowen kindly writes that he considers that the earliest phase of this earthwork could be of Bronze Age date.

Socketed arrowheads. LIST 59. MAP 28.

Barbed socketed arrowheads of bronze are absent from Britain and the Netherlands; they occur in north-eastern France and in Belgium, though in smaller numbers than tanged arrowheads.

There are multiple finds from Fort-Harrouard and Han (List 59, 1, 7) and a possible associated find in the Bronze Final III hoard from Saint-Roch (List 59, 4). The distribution of socketed arrowheads is more easterly than that of tanged arrowheads (Mercer 1970, 173-185, 208-210, fig. 1). Socketed arrowheads occur in Reinecke B burials in southern Germany, e.g. Mantlach, Ldkr. Parsberg (Torbrügge 1959b, 95, 167 no. 194B, Taf. 43, 46-47, 49) and later Tumulus finds are known (Mercer 1970, 175-177). Early Urnfield finds are known further west (*ibid.*, 180-182), e.g. Memmelsdorf, Kr. Bamberg, Bavaria (Torbrügge 1959a, 71 no. 112, Abb. 14.4; Schauer 1971, 141), Reinecke D; Ockstadt, Kr. Friedberg, Hesse, Ha A1 (Müller-Karpe 1961, 44, Taf. 16, 6; 28B); Wollmesheim, Kr. Landau, Rheinland-Pfalz, Ha A2 (Krahe 1960, Abb. 6, 4-6). Two French finds do not appear to be reliable associations: Chaux-sur-Cresille, Clucy, Jura (Sandars 1957, 92); Guyans-Vennes, Vercel, Doubs (Millotte 1963, 299-300 no. 226, pl. XXIV, 1-6). The latter find may be of Bronze Moyen III date (*ibid.*, 101, 300).

Socketed arrowheads, plain or spurred, probably appeared in north-eastern France and Belgium during the early Urnfield period. Finds of socketed and tanged arrowheads on the same sites, e.g. Fort-Harrouard and Han, may reflect association in early Urnfield burials, e.g. Wollmesheim; a common origin with tanged arrowheads would support an early Urnfield date for the appearance of socketed barbed arrowheads.

Sprockhoff Type I swords. LIST 60. MAP 29.

The earliest flange-hilted swords of northern Europe were defined by Sprockhoff (1931, 1-12); Cowen studied their distribution in central Europe (1955, 56-63). Sprockhoff's bipartite division of these straight-bladed swords was based primarily on the form of the grip: swollen, Type Ia, straight-sided, Type Ib. Schauer retained this basic division but elaborated many types and variants for the north Alpine material (1971, 105-131). For Czechoslovak swords, Novák (1975, 14-19) retained Sprockhoff's terminology, with the addition of the Smolenice group, distinguished by Cowen (1966, 198-301) from Type Ib.

The sword from La Bouille (List 60, 1) was compared with the Smolenice form by Verron (1973, 387), but Smolenice swords have straight or slightly concave shoulders (Novák 1975, nos. 46-54). The hilt of the French sword, with convex shoulders and two pairs of rivet-holes, can be matched by a Ib sword from Nové Mesto, Slovakia (*ibid.*, no. 72), which is more similar to the La Bouille sword than any example illustrated by Schauer (1971). The Nové Mesto sword is of Reinecke C2 date (Novák 1975, 19).

The Bosserfeld sword (List 60, 2) was placed in Type Ia by Cowen (1955, 122 no. 28); Schauer has related it to the Annenheim type (1971, 127 n.52). Annenheim swords, while widespread in central Europe, are most common in the Nordic area (*ibid.*, 128-129, Taf. 118B); the Dutch find is remote from any other example. Central European finds belong to Reinecke C2 and Reinecke D, Nordic finds to the MII/III transition (*ibid.*, 128). The later examples may have blade-sections derived from early Urnfield types; the precise form of the Bosserfeld sword is uncertain.

Nenningen swords. LIST 61. MAP 29.

This type stands at the head of the early Urnfield series of flange-hilted swords. It retains the straight blade of earlier types, but the hilt has narrower shoulders and more rivet holes in the grip, more like swords with leaf-shaped blades (Cowen 1951, 204-206; 1955, 63-71). Schauer includes most of Cowen's Nenningen swords among his Reutlingen type and its variants (1971, 132-148), but he does not mention any west European examples and I have, therefore, retained Cowen's terminology.

Nenningen swords and their variants occur during Reinecke D and Ha A1 (Cowen 1955, 64-68; Schauer 1971, 134-144). Their distribution is widespread throughout central and northern Europe, reaching the middle Rhine and eastern France, as well as the Low Countries (Cowen 1955, Karte B; List 61, 2-6). The flange-hilted sword in the Rosnoën hoard (Briard and Giot 1958, 24 no. 29, pl. X) has often been attributed to the Nenningen type (Briard 1965, 155; Gaucher and Mohen 1972, 511-512; Jockenhövel 1975, 141) though Cowen

(card-index) considered that the hilt was of Hemigkofen form. The hilt has slightly convex shoulders with four rivet-holes; the grip has straight sides with three rivet-holes; the flanges project and splay at the butt. The blade has a broad midrib whose offsets end abruptly below a ricasso. The hilt seems closest to the Reutlingen type (Schauer 1971, 132) though the same arrangement of rivet-holes also occurs on the Uffhofen variant of the Hemigkofen type (Schauer 1971 no. 469). The form of the blade is characteristic of the Rosnoën type (see p. 111). The Vic-sur-Aisne sword also has a broad midrib with terminating offsets (List 61, 1) and is probably another Rosnoën/Nenzingen hybrid. The Bronze Final I date of the Rosnoën hoard accords with the appearance of Nenzingen swords during Reinecke D, though the La Bouille sword (List 60, 1) suggests that the flanged hilt had already reached northern France.

Buchloe/Greffern swords. LIST 62. MAP 29.

This group of swords is characterised by a flanged hilt with straight sides lacking pronounced shoulders; there is a ricasso and a straight blade, usually with some form of midrib, and bevelled edges. The blade-section may be of Rixheim form; this suggests a Reinecke D date. Associated finds place Buchloe/Greffern swords in Reinecke D and Sub-Period II (Schauer 1971, 150-154). Their distribution is mainly north-Alpine, with Nordic outliers (*ibid.*, 154-155, Taf. 120A).

The Saint-Just-en-Chaussée hoard provides a Bronze Final I date (List 62, 1) and the possible association with a straight-based basal-looped spear-head of one of the eponymous swords (Schauer 1974a; see p. 102) also indicates correlation with LBA1. The hilt of the sword from Coveney, Cambs. (Evans 1881, fig. 348; Fox 1923, 59, pl. IX, 4), may reflect Buchloe/Greffern influence, though its blade is plain. The appearance of a Buchloe/Greffern sword in north-eastern France is probably related to the occurrence there of contemporary rod-tanged swords.

Stätzling swords. LIST 63. MAP 29.

Schauer (1971, 144-147) has defined a group of straight-bladed swords with slightly swollen grips, containing several rivet-holes, and pommel-tangs. Three of these swords, from 'Rouen' (*ibid.*, 145 n. 15), Stätzling (*ibid.*, 145 no. 435), were included by Cowen in his list of Letten swords (1955, 132-133), but the Letten type has a leaf-shaped blade (see p. 110-1).

Dated finds of Stätzling swords belong to Ha A1 and early MIII (*ibid.*, 146). Typologically, the straight blade relates Stätzling swords to the Nenzingen type, while the hilt form resembles that of Letten and Erbenheim swords (see p. 110-1). The distribution of Stätzling swords is widely scattered (Schauer 1971, 146-147, Taf. 120A); there are several examples from the Aegean. The Issy-les-Moulineaux sword (List 63, 1) is probably of north-east-Alpine origin. Stätzling swords are absent from the western Alps and the middle Rhine where leaf-shaped flange-hilted swords are concentrated, so its appearance is probably not to be linked with the appearance of these leaf-shaped swords.

Rixheim swords. LIST 64

Rixheim swords are distinguished by a tapering hilt, narrower than the blade, usually containing three rivet-holes; a ricasso is often present immediately below the hilt. The blade is straight-sided, tapering towards the point, giving the entire sword a long pointed-oval outline. Blade sections vary in detail, but usually have a midrib flanked by grooves and, often bevelled edges. Below the hilt, the grooves diverge to form a variety of ornamental motifs.

This well-known type has been discussed recently by Schauer (1971, 61-75), for west central Europe, and by Reim (1974a, 9-23, 32-38, 43-45, 49-50), for eastern France, and Reim's typology will be employed here.

The ? Seine sword (List 64, 2) belongs to Reim's variant A (1974a, 9-10); it has a ricasso but lacks ornament. The distribution of variant A is mainly north-Alpine (*ibid.*, Taf. 11A) and local workshops are postulated. The motifs on the decorated swords belong to group 1 (*ibid.*, 38, Abb. 2) of early Reinecke D (*ibid.*, 43-44; 1974b, Abb. 4). The lack of ornament and the broad midrib of the ? Seine sword may suggest Rosnoën influence.

The swords from Abbeville Museum and Huy (List 64, 1, 3) both belong to variant C (Reim 1974a, 11-14) like the only Rixheim sword from north-western France: Rennes, Ille-et-Vilaine (*ibid.*, 11 no. 17). The distribution of variant C is mainly north-Alpine (*ibid.*, Taf. 12A), but reaches northern Italy and eastern Slovakia, as well as Brittany and Belgium; Reim again postulates local workshops (*ibid.*, 14). Associated finds are peripheral to the main distribution: Cattabrega di Crescenzago, Milano, cremation of the età del bronzo recente, broadly equivalent to Reinecke D (Bianco Peroni 1970 22 no. 34), but also to the early part of Ha A1 (*ibid.*, 7); Rimavská Sobota hoard, Slovakia, which contains material predominantly of Reinecke D (Novák 1975, 10-11 no. 32). The motifs on swords of variant C belong to group 1 (Reim 1974a, 38, Abb. 2), though motif 6 also occurs in group 2 (*ibid.*). This suggests an early/middle Reinecke D date for variant C (*ibid.*, 43-45; Reim 1974b, Abb. 4).

The Stevensweert sword does not belong to a specific variant (List 64, 4), but bears ornament of motif 9 (Reim 1974a, 37 n.7) which belongs to group 2 (*ibid.*, 38, Abb. 2) of middle and late Reinecke D (*ibid.*, 44-45).

The Rixheim/Rosnoën hybrid sword in the Saint-Just-en-Chaussée hoard (List 64, 5) is related to Reim's variant G (1974a, 20-21). The single decorated example bears ornament of motif 2 (*ibid.*, 33), group 1 (*ibid.*, 38, Abb. 2), early Reinecke D (*ibid.*, 43-44; 1974b, Abb. 4). This is acceptable for the Bronze Final I date of the hoard. The Montières sword (List 64, 6) is probably contemporary.

While the overall distribution of Rixheim swords (Reim 1974a, Taf. 11A-14A) is similar to that of rod-tanged swords (Reim 1974b, Taf. 3, 2), finds on north-eastern France are less common (cf. Map 30) and there is no such evidence for the production of Rixheim swords in the Paris basin as there is for rod-tanged swords. There is no certain example of a Rixheim sword in Britain. Mention has occasionally been made of a sword hilt from Sussex with a triangular setting of rivet-holes (Trump 1962, 93, 99 no. 260, 102; Eogan

1965, 7; Smith 1959, 182 n.5; Burgess 1976b, 90 no. 24), but this find has not been authenticated.

Monza swords. LIST 65. MAP 30.

Monza swords have thin rod-tangs and tapering blades related in form and ornament to Rixheim blades; Reim distinguishes three variants according to the form of the hilt (1974a, 26-29; 1974b, 17, Abb. 1, 1-3). The typological relationship with Rixheim swords suggests a Reinecke D date and the finds from the Monza cemetery are broadly contemporary (Reim 1974a, 46; 1974b, 18; Bianco Peroni 1970, 31, Taf. 75D). The distribution of Monza swords stretches from the Alto-Adige to Paris (Reim 1974b, Taf. 3, 2; de Marinis 1970). Variant B was probably produced in northern Italy and variant C farther north (Reim 1974b, 17).

Both of the swords from north-eastern France belong to variant C (List 64, 1-2). I have argued that the Monza sword from Paris (List 64, 1) should be an early example of variant C with a transitional early/middle Reinecke D date (O'Connor 1976a). The Ile-Saint-Ouen sword does not appear to be a characteristic Monza type; it bears ornament of Reim's motif 9 (1974a, 37 n.8) which belongs to his group 2 (*ibid.*, 38, Abb. 2) of middle and late Reinecke D (*ibid.*, 44-45).

Grigny swords. LIST 66. MAP 30.

Grigny swords have short, thick rod-tangs often with one or more rivet-holes in the terminal; there are no rivet holes in the hilts; blades are broad and straight. Reim distinguishes two variants: A, with curved shoulders, and B, with S-shaped shoulders. Blades of variant A may bear ornament like that on Rixheim swords (1974a, 29-31; 1974b, 17, Abb. 1, 5-6) which suggests a late Reinecke D date (1974a, 46). The butt of a Grigny sword of variant B (*ibid.*, 30 no. 48) occurs in Cannes-Ecluse hoard I, Seine-et-Marne, suggesting a Ha A date (*ibid.*, 47-48; see p. 99-100). Grigny swords are only found north of the Alps, from south-western Bohemia to the Seine (Reim 1974b, Taf. 2, 2).

The Grigny sword from La Vaquerie (List 66, 3) has an ornamented blade, possibly related to Reim's motif 10 of group 2 (1974a, 38), but also similar to motifs 11 and 12 (*ibid.*, Abb. 1) of late Reinecke D (*ibid.*, 40, 46). The examples from ? Bardouville, Choisy-le-Roi and Geraardsbergen have broad mid-ribs without ornament (List 66, 2, 4-5). The Bardouville sword has offset edges ending below the hilt, a feature of Rosnoën swords (see p.) and may be regarded as a Rosnoën hybrid, cf. the Rosnoën sword with the remains of a tang from Bardouville (List 73, 14). The presence of the hilt of a Grigny sword in the transitional Bronze Moyen III/Bronze Final I hoard from Choisy-le-Roi (120) suggests an origin for these swords earlier than that proposed by Reim and the undecorated Grigny swords may be Rosnoën hybrids.

Pépinville swords. LIST 67. MAP 30.

The Pépinville type is characterised by a rod-tang with a hooked terminal and a bell-shaped hilt. Variant A has a straight-sided blade; variant B has a leaf-shaped blade with two rivet-holes or notches; variant C has a leaf-shaped blade without rivet-holes; variant D is identical to C except for a rib at the junction of the tang and the hilt (Reim 1974b, 17-18, Abb. 2, 1-4).

With the exception of one example from Lorraine (*ibid.*, Liste 2, 12), Pépinville swords with leaf-shaped blades appear to be confined to the Alpine area and northern Italy (*ibid.*, 18, Taf. 2, 2). Straight-bladed examples are found only in northern France (*ibid.*, Liste 2, 10-11; List 67, 1-2). Reim dates the eponymous Pépinville burial to the Reinecke D/Ha A1 transition (1974a, 47), though Kubach places it in Reinecke D (1977, 420 n.69). There is a tang from a Pépinville sword in the hoard from Clans, Alpes-Maritime (Reim 1974a, 47), which can be equated with Reinecke D (Schauer 1975a, 49, Taf. 22). Typology suggests that the straight-bladed Pépinville swords were restricted to Reinecke D (Reim 1974b, 22). The possible association of the Tirancourt sword (List 67, 2) with a straight-based basal-looped spearhead and the provenance of the sword from Champlay, Yonne (Reim 1974b, Liste 2, 10), from the area of the Bronze Final I cemetery of La Colombine (Mordant 1975, 424-427) should support this chronology. These straight-bladed Pépinville swords were probably local products of northern France.

Arco swords and Terontola swords. LIST 68. MAP 30.

These rod-tanged swords have straight tangs, usually with thickened terminals, and leaf-shaped blades. While Reim (1974b, 18, Abb. 2, 5-6; 3 1-4) recognises several variants, there is little distinction except in the form of the shoulders in the bell-shaped hilt; Arco swords have two rivet-holes, Terontola swords have none. Typology suggests a Ha A1 date for these leaf-shaped swords (*ibid.*, 22). There is an Arco sword in a hoard from Nočaj-Salas, Vojvodina (Popović 1964, Taf. VIII, 1). This Yugoslav author dates the hoard to Ha A2 (*ibid.*, 21) and Kosorić gives a similar date (1972, 8, 11-14), but Garasanin (1973, 639) and Schauer (1974b, 29) both prefer Ha A1.

The distribution of Arco and Terontola swords is concentrated in northern Italy (de Marinis 1972, 98; Reim 1974b, 18, Taf. 3, 1). The half-dozen examples from the Paris area form a substantial group and the possibility of local production cannot be excluded. The Arco sword from London (List 68, 1) presumably had the same origin as the Paris group; it is the only certain example of a rod-tanged sword so far known from Britain. The Terontola sword from Statte (List 68, 8) is presumably of Alpine origin.

Unterhaching swords. LIST 69. MAP 30.

Unterhaching swords have a plain rod-tang and a leaf-shaped blade with a distinct midrib. Rivet-holes are not usually present, but several examples have a ricasso (Reim 1974b, 18, Abb. 3, 5-6; Schauer 1971, 83-85). Unlike other forms of rod-tanged sword, the Unterhaching type is common in Germany, especially on the Middle Rhine (Reim 1974b, Taf. 3, 1) and the Paris example (List 69, 1) appears to be the only outlier. Unterhaching swords were produced during Ha A1 and may have persisted into Ha A2 (Schauer 1971, 85; Reim 1974b, 22).

Early Urnfield solid-hilted swords.

There is a single example of an early Urnfield solid-hilted sword from north-eastern France; it is from the Oise below the bridge at Boran, Oise (Gaucher and Mohen 1972, 421, fig. 1; Blanchet and Lambot 1975, 33-34 no. 10; Musée Vivenel, Compiègne H.860; Fig. 40, 1). The tapering blade has

a slightly concave lozenge section and a long notched ricasso. X-ray examination shows a long tang (Blanchet and Lambot 1975, fig. 11). The solid hilt is attached by two rivets in convex shoulders which form a broad concave base to the hilt. The grip is slightly convex, narrower towards the pommel, and has an octagonal section. The pommel is roughly oval in form with a central knob and a single perforation.

Solid-hilted swords with octagonal-section grips (Achtkantschwerter) are characteristic of Reinecke C in central Europe; most examples have decorated hilts with omega-shaped bases and blades with broad midribs (Holste 1953a, 16-25, Taf. 9-12, Karte 4, Taf. 18). Many examples are found in the Nordic area, especially Denmark, during MII (Randsborg 1968, 54-55). Achtkantschwerter were succeeded in central Europe by Riegsee swords of Reinecke D date (Holste 1953a, 26-30, Taf. 13-14, Karte 5); Riegsee swords are rare in northern Europe (Randsborg 1968, 55). Riegsee swords are often ornamented, though the motifs are different from those on Achtkantschwerter; some grips retain an octagonal section, but others are more rounded; the omega-shaped hilt can be replaced by a broad convex form; blades usually retain a broad midrib, but a ricasso is often present.

Holste (1953a, Fundliste 7, no. 3, Taf. 14, 5) illustrates one Riegsee sword which provides a parallel for the Boran sword; this is from Kissing, Ldkr. Friedberg, Bavaria, and matches the Boran sword in all respects. The Kissing sword has been discussed by Müller-Karpe (1961, 12). The form of the hilt relates it to Riegsee swords, while the octagonal-section grip relates it to Achtkantschwerter; the perforation in the pommel and the lozenge-section blade relate it to Dreiwulstschwerter of Ha A1. Riegsee swords from southern Germany tended to retain the octagonal grip, while those further east had a more rounded section. Müller-Karpe suggests that the blade was a replacement in an earlier hilt which had a hole drilled through its pommel at the same time. The explanation may be plausible for a single sword but hardly for a pair. These are transitional examples which constitute a small group with a third sword from a burial at Herlheim, Ldkr. Schweinfurt, Franconia (Abels 1975). The Herlheim sword is similar to the Boran and Kissing swords in all respects except its quadrilateral grip (*ibid.*, Abb. 2, 1). The accompanying objects are all of Reinecke D date (*ibid.*, 33) which supports typological considerations of a date at the end of Reinecke D for these swords. A typologically earlier sword comes from the Danube at Barbing, Ldkr. Regensburg, Bavaria (Torbrügge 1959b, 200 no. 297, Taf. 71, 5); this has a decorated Riegsee hilt on a Dreiwulstschwert blade.

The Boran sword appears to be of south German origin and Reinecke D/Ha A1 transitional date, earlier than the Ha A1 Dreiwulstschwerter from the Saone at Ile de Ray, Ray-sur-Saône, Haute-Saône (Millotte 1965b, 90, fig. 1, 3), probably of Erlach type (Müller-Karpe 1961, 8), and Angers, Maine-et-Loire (Cordier and Gruet 1975, 232, fig. 45). The Angers sword is unusual for having four ribs on the grip; this feature occurs on two swords of Schwaig type (Müller-Karpe 1961, 15 n.1, Taf. 9, 4; 10, 6) and on four undiagnostic swords (*ibid.*, 46, Taf. 7, 1-4). These swords are all of Ha A1 date and the Angers sword also resembles examples of the Ha A1 Erlach type (*ibid.*, 7-13).

Hemigkofen swords. LIST 70. MAP 31.

The Hemigkofen type was first defined by Cowen (1951, 186-198; 1955, 79-85); it has a short, leaf-shaped blade with lozenge section, straight shoulders and a slightly swollen grip, usually with the flanges projecting at the pommel. Schauer (1971, 157-165) has recognised two variants, apparently on the basis of the number of rivet-holes in the shoulders; the true Hemigkofen sword usually has six or eight, while the Elsenfeld variant has two and the Uffhofen variant four. The Elsenfeld variant tends to have a narrower profile and larger blade.

Hemigkofen swords occur north of the Alps from the mouth of the Loire to the Middle Elbe; they are most common in the region of the upper and middle Rhine (*ibid.*, Taf. 120B). Schauer proposes the existence of local manufacturing centres, including one on the lower Thames (*ibid.*, 159). Associated finds are uncommon (*ibid.*, 159 n.11). Some Hemigkofen swords have straighter blades related to those of Reutlingen swords (*ibid.*, nos. 460, 462, 463), which suggests a Ha A1 date, and there is one example from a Ha A1 burial but most Hemigkofen swords are probably of Ha A2 date (*ibid.*, 159). There is one early MIV find and a fragmentary example from a burial of Bronze Final IIB at Eguisheim, Haut-Rhin (Zumstein 1966, 50, 108, fig. 35, 187-190; 1976, 639 no. 5). Uffhofen swords are also most common on the Rhine but their distribution reaches to the west rather than the east (*ibid.*, Taf. 120B); there are datable finds of Ha A1 and Ha A2 (*ibid.*, 162). Elsenfeld swords have a more easterly distribution (*ibid.*, Taf. 120B); datable finds are Ha A2 and later MIV but two examples (*ibid.*, nos. 483, 486) have straighter blades which may indicate an earlier origin (*ibid.*, 164-165). Leaf-shaped flange-hilted swords of south-west German inspiration were probably produced in the Paris area, the lower Thames, and perhaps the Scheldt area, by Ha A2, later LBA1.

Erbenheim swords. LIST 71. MAP 31.

Erbenheim swords have a long, leaf-shaped blade, often with a deep ricasso, broad, straight shoulders, a swollen grip and a pommel-tang (Cowen 1951, 198-200; 1955, 73-76). The name is retained by Schauer (1971, 167-171).

Erbenheim swords are dated to Ha A2 (*ibid.*, 170). There are three centres of distribution: on the middle Rhine, the lower Rhine and the lower Thames, and Schauer suggests that the latter represents a workshop area. The Dutch swords (List 71, 6-8) belong to the lower Rhine centre, while the French sword could belong to this or to the British centre (Schauer 1971, 170-171, Taf. 121A).

The sword from Brixworth (List 71, 4) appears to belong to the Erbenheim type; its form and dimensions may be compared to the example from the Nahe at Bingen, Rheinland-Pfalz (*ibid.*, 168, no. 499).

Letten swords. LIST 72. MAP 31.

Cowen defined Letten swords as hybrids between the Hemigkofen and Erbenheim types; they have the short blade of the former and the pommel tang of the latter; their shoulders have four rivet-holes like the Uffhofen

variant, and their grips resemble the Hemigkofen rather than Erbenheim sword (1951, 200-204; 1955, 78-79). Schauer doubts whether Erbenheim swords were typologically earlier than Letten swords for the pommel tang was already known on straight-bladed Stätzling swords, a group unrecognised by Cowen (Schauer 1971, 167).

The only datable find of a Letten sword belongs to Ha A2 (*ibid.*, 167).

Examples are not numerous. Gaucher and Mohen (1972, 521-522) claim several swords for the Letten type which Schauer includes under other types: the Stätzling sword from Issy-les Moulineaux (List 63, 1) and the Erbenheim sword (Schauer 1971, 169 n.11) from the Legeur at Ploulec'h, Cotes-du-Nord (Giot 1967, 336, fig. 6, centre). There is also a sword from the Grotte de Roucadour, Thémînes, Lot (Arnal, Couchard and Lorblanchet 1969, 67-69, fig. 4). The length of the Ploulec'h sword, 59.5 cm, and its four rivet-holes in the shoulder, suggest that it is a Letten sword (cf. Schauer 1971, 166-167); the Roucadour sword, 62.0 cm long, probably with four rivet-holes in the shoulders also appears closer to the Letten type.

These finds, with the examples from north-eastern France (List 72, 1-4) suggest that Letten swords were most numerous in France and that the concentration in the Paris area is as large as that on the upper Rhine (Schauer 1971, 167, Taf. 121A). The identification of the sword from Amiens (List 72, 4), which lacks its pommel, seems uncertain.

Rosnoën swords. LIST 73. MAP 32.

Rosnoën swords have a straight blade with a broad midrib; the hilt is usually more or less trapèzoidal with rivet-holes or notches, usually four, sometimes two or six. The transition from blade to hilt is normally smooth, though slightly angular shoulders are sometimes present. Some examples bear a notched ricasso (Briard 1965, 153-155; Gaucher and Mohen 1972, 312). The Rosnoën blade form is clearly related to group IV rapiers (Burgess 1968c, 15). Hilts show central European influence: Rixheim (see p. 106); rod-tanged (see p. 107, List 73, 14); Haguenau type with two notches (Verron 1973, 397; Gaucher and Mohen 1972, 311; List 73, 16). The distribution of Rosnoën swords is concentrated in Brittany (Briard 1965, fig. 56), where they are characteristic of Bronze Final I, and they are common in northern France as far east as the Somme and the Oise (Map 32), but rare further south.

Rosnoën swords occur in several central European hoards: Windsbach, Ldkr. Ansbach, Franconia (Müller-Karpe 1959, 147, Taf. 155A, 8, 18; Schauer 1971, 82 no. 273), Reinecke D; Stockheim, Ldkr. Gunzenhausen, Franconia (Müller-Karpe 1959, 147, Taf. 156, 74), Rhine at Mainz (Kubach 1973a, Abb. 2, 1-3; Schauer 1971, 81 no. 272), Rydec, Bohemia (Novák 1975, 11 nos. 33-36), Reinecke D/Ha A1 (Kubach 1977, 391, 420 n.70, 455; von Brunn 1968, 302). There are isolated finds from ? R. Main and Geneva (Schauer 1971, 81 nos. 270-271).

Rosnoën swords are characteristic of LBA1 in Britain, where they have been referred to as 'Lambeth' swords (Burgess 1968a, 5, 35, fig. 3, 1-2; 1968c, 15-16; 1974, 205; Rowlands 1976, 78, pl. 50, 1964-1969). There

are four isolated finds in the lower Thames valley (Map 32) and hoard finds from: Penard ((107), Burgess 1968b, fig. 5, 1), Dover (108), Appleby (109) and Ambleside (112), indicating currency throughout LBA1. The Dover hoard may contain as many Rosnoën swords as the other finds together and it is unfortunate that the poor condition of the pieces in this hoard has robbed us of find typological details. The preponderance of alien objects in the Dover hoard supports the conclusion that British finds of Rosnoën swords are imports from France and the geographical position of the hoard supports the conclusion that most came from north-eastern France rather than Brittany.

The appearance of several Rosnoën swords in the Low Countries (List 73, 23-28) is not surprising in view of the central European finds. Rosnoën influence has been suggested for a small group of swords from Languedoc and Catalonia (Harrison, Marti Jusmet and Giró 1974, 101-103; Guilaine 1972, 217-219, fig. 73), though the Catalan sword (Harrison, Marti Jusmet and Giró 1974, fig. 7) appears to be a leaf-shaped rod-tanged sword bearing ornament of Reim's motif 11 (1974a, Abb. 1), and this southern group should probably be related to rod-tanged swords rather than to Rosnoën swords.

Jockenhövel has suggested that Mantoche (Reim 1974a, 24-26) and Rixheim variant G (*ibid.*, 20-21) swords were the predecessors of notched Rosnoën swords, implying that these appeared only in later Reinecke D (1975, 141), following Briard's view of Rixheim precedence (1965, 173), but Rosnoën swords can surely be derived from rapiers and there appears to be no chronological evidence to place the hybrids earlier.

Appleby solid-hilted swords. LIST 74.

This small group of swords is characterised by a straight blade, lozenge or oval in section, and a plain solid butt, shoulders tapering to a straight-sided grip with an expanded pommel. It may be called after the Appleby hoard which, like the Ambleside hoard (List 74, 3-4) gives a LBA 1 date.

Coles (1961) has discussed the Cumbrian examples (List 74, 1-2) and suggested local manufacture, perhaps with Irish influence, but Nordic inspiration. Nordic solid hilted swords of MII and MIII were far more elaborate than the Appleby swords (Ottensmeyer 1969); most hilts had omega-shaped bases and exceptions with straight bases are rare (*ibid.*, Taf. 4, 20; 7, 39; 10, 62; 20, 144). The angular bases of the Cumberland and ? Bardouville swords (List 74, 2, 5) cannot be matched in the Nordic area. All Nordic swords had hilt and blade cast separately; all the Appleby swords appear to be cast in one. Nordic blades have a midrib flanked by grooves and the lozenge or oval form of the Appleby sections appear to be absent. Neither Nordic nor central European (Holste 1953a; Müller-Karpe 1961) models appear to have been the inspiration for Appleby swords.

Solid bronze hilts were occasionally employed on rapiers (see p. 73). and there is one with the Appleby sword in the Ambleside hoard (List 29, 1). The solid-hilted weapon from Belleek, Co. Fermanagh (Evans 1881, 234, fig. 292), has a blade with a broad midrib and should be broadly contemporary with the Appleby swords. The lozenge sections of three Appleby swords (List 74, 2-3, 5) can be matched on the sword from Nottingham (List 76, 3) and the oval section (List 74, 1) on the sword in the Eriswell hoard (111). Like these two weapons, the Appleby swords were probably experimental.

The Appleby sword from ? Bardouville (List 74, 5) is clearly a British export.

Ballintober and related swords. LIST 75, MAP 33.

The swords considered here have leaf-shaped blades and flat tangs, usually with four rivet-holes or notches. The Ballintober type was first defined by Hodges (1956, 37), while Burgess has distinguished Chelsea swords, with a flat blade section (1968a, 35, fig. 3, 4; 1968c, 16, fig. 3, 5), from Ballintober swords with a lozenge section (1968a, 35, fig. 3, 6-7a; 1968c, 16, fig. 3, 6). These swords have angular shoulders, often broad, and Chelsea swords have a ridged butt, a feature in common with Rosnoën swords (*ibid.*, 16). Chelsea swords are much less numerous than Ballintober swords (*ibid.*; 1968a, fig. 7).

Ballintober swords are widespread throughout northern and central Ireland and southern and eastern England, where they are found principally in the Thames valley (*ibid.*; Rowlands 1976, 78-80, pl. 50, 1948; pl. 51, map 20). There is a single Welsh find, the Penard hoard (107). Other associated finds are Southchurch (106) and Worth, Devon (Burgess 1968a, fig. 3, 7a-c); all are LBA1. The number of find-spots of Ballintober and related swords in north-eastern France (List 75) is approximately equal to that of Rosnoën find-spots in Britain (see p. 111-2). Ballintober swords have also been found in Brittany (Briard 1965, 164) and one example (*ibid.*, fig. 55, 3) bears on its blade outline ornament derived from leaf-shaped flange-hilted swords (Jockenhövel 1975, 146).

A lozenge section is usual on the earliest continental swords with leaf-shaped blades, whether rod-tanged (Schauer 1971, Taf. 41-44) or flange-hilted (*ibid.*, Taf. 67-76). The London Arco sword of Ha A1 date (List 68, 1) is probably the earliest continental leaf-shaped sword to appear in Britain; the flange-hilted swords with leaf-shaped blades are mainly of Ha A2 date (see p. 110-1). Burgess (1974, 205 n.270) has suggested that Ballintober swords developed under rod-tanged influence and did so as early as Rosnoën swords. So long as the leaf-shaped blade is accepted as a foreign innovation (Cowen 1951, 195), Ballintober swords can, in the present state of knowledge, have developed only after the appearance of the London Arco sword in Ha A1 and may not have become common until Ha A2. The same chronology should apply to rapiers and dirks with leaf-shaped blades, the Cutts type (Burgess 1974, 206 n.275, fig. 35, b), cf. the example in the Penard hoard (107) with a Ha A2 knife. Rosnoën swords clearly appeared during Reinecke D (see p. 111-2) and Jockenhövel has distinguished between the period of their predominance, the Zeitstufe der Schwerter mit schilfblattformiger Klinge, and the succeeding Zeitstufe der ältesten Schwerter mit weidenblattformiger Klinge (1975, 140-147).

Miscellaneous swords. LIST 76

A small group of miscellaneous LBA1 swords may be considered here.

If the simple weapon from Chatham (List 76, 1) has any continental relations, these might be with the Haguenau type (Gaucher and Mohen 1972, 311), related in turn to the late Tumulus Vernaison type (Reim 1974a, 6-7, 45).

The Methwold sword (List 76, 2) has been described as a member of the Rixheim-Monza group (Rowlands 1976, 76; Trump 1968, 221). While it is not a rod-tanged sword, its blade section is closer to the Rixheim form (Reim 1974a, 54 no. 2, Abb. 3, 2) than that of any other experimental British weapon. The hilt of the Methwold sword has no Rixheim characteristics. A general similarity to Rixheim-Rosnoën hybrids may be invoked but, like the sword from Eriswell (111), only 15 km away, the Methwold sword should be on experimental British product. Rowlands (1976, 76) and Trump (1968, 221) both suggest that it was a French product, but there are no parallels to support this conclusion, and the manufacture of the Methwold sword should not have been beyond the capability of a Fenland bronze-worker.

The sword from the Trent (List 76, 3) has nothing in common with the Rixheim-Monza group and also lacks continental parallels (Rowlands 1976, 76). The form and section of its blade can best be matched on solid-hilted swords of Appleby type (see p. 112). The arrangement of four rivets on the hilt should be related to the Rosnoën and Ballintober types. The appearance of ornament on a sword with a straight, lozenge-section blade can be matched on the example from the Seine at Pont Saint-Michel (List 76, 5), a variant of the Haguenau type according to Gaucher and Mohen (1972, 311).

The sword from Dendermonde (List 76, 6) is a re-used blade; the straight sides and notches suggest a LBA1 date. The blade section may be related to Reim's form 8 (1974a, 54, Abb. 3, 8; Schauer 1971, Taf. 32, 229).

The Heumen weapon (List 76, 7) is a plain tanged sword; the ricasso suggests a date not before Reinecke D. The Grigny type (see p. 107) would be the closest rod-tanged type.

Finally, the blade from Kingston (List 76, 4) has the appearance of a rod-tanged rapier. Butler (1963a, 213) suggests Nordic influence but the relevant types are of MIV and MV date and have less complex blade sections (Baudou 1960, 10-11). There is a rod-tanged rapier from Cutts, Co. Derry (C.B. Burgess; Trump 1962, 100 no. 350), but the form of the Kingston blade, with its expanding midrib lacking peripheral grooves, is not fully characteristic of the British rapier series.

Swords: discussion.

During the earlier part of LBA1 Rosnoën swords (List 73) were dominant in north-eastern France, while notched rapiers of group IV were probably the most common weapon in southern Britain at this time. Straight-bladed flange-hilted swords (Lists 60-63) of Reinecke C2 to HA A1 date were known in north-eastern France, Belgium and the Netherlands but were absent from Britain. Rixheim swords (List 64) occurred in the same areas as these flange-hilted swords, but were less numerous. Rosnoën hybrids with both flange-hilted and Rixheim swords were produced in northern France. Flange-hilted and Rixheim swords were derived from west central Europe, especially the Middle Rhine area, while most types of rod-tanged swords were derived from northern Italy and the west Alpine area. Straight-bladed Monza, Grigny and Pépinville swords (Lists 65-67) of Reinecke D date are found in north-eastern France and in Belgium; some Grigny swords show Rosnoën influence. Rod-tanged swords with leaf-shaped blades, Ha A1, are more characteristic of the

Paris area and reach southern Britain and Belgium. The Arco and Terontola (List 68) swords were of Italian inspiration, with local production in the Paris area possible while the single Unterhaching sword (List 69) was of middle Rhine origin. The early Urnfield solid-hilted sword from Boran is of south German origin and Reinecke D/Ha A1 date (see p. 108-9).

A few experimental swords were produced in Britain before the general adoption of the leaf-shaped swords. Appleby solid-hilted swords (List 74) represent a small but homogeneous type with one example exported to northern France; the sword from the Trent near Nottingham (List 76, 3) is related to this type. Apart from the London Arco sword (List 68, 1), there is no rod-tanged sword from Britain. The sword from Methwold (List 76, 2), exhibits a little Rixheim influence; the Eriswell sword (111) is an experimental slashing sword. The Ballintober and Chelsea types, with leaf-shaped blades and flat hilts, should not have been produced before Ha A1, the later part of LBA1; several were exported to north-eastern France (List 75). Leaf-shaped flange-hilted swords appeared in west central Europe during Ha A1 but did not become common until Ha A2. The earliest type, Hemigkofen and its variants (List 70) is found in north-eastern France, Belgium, the Netherlands, Britain and Ireland; local production in some of these areas is probable. Erbenheim swords (List 71) may also have been produced in Britain, as well as in the southern Netherlands. Letten swords (List 72) did not reach Britain or the Netherlands but one of their largest concentrations was in the Paris area. These flange-hilted swords of late LBA1 were imitated in Britain (Burgess 1968a, 35, fig. 1, 4-5; 1974, 205 n.271-272), principally in the lower Thames valley (Burgess 1968a, fig. 6). Burgess has suggested the existence of similar transitional swords in France (*ibid.*, 36, fig. 1, 6), though French scholars have not yet made such a distinction and his illustrated example appears to be an Atlantic leaf-shaped sword of Bronze Final II (List 111, 53).

Shields. LIST 77.

A fine series of bronze shields is known from Britain and Ireland, though no shields have been found in France, Belgium or the Netherlands. Coles challenged the traditional view of an early Urnfield origin for bronze shields in favour of a late Urnfield eighth century date (1962, 162-163, 174), denying the association of a shield from Plzen-Jikalka, Bohemia, with an adjacent group of objects of Reinecke D date (Coles 1967a). Since Coles wrote, significant finds have been made in Hungary and in England.

Bouzek (1968) repeated the claim for the validity of the Plzen association and pointed out that bronze helmets, corslets and greaves all had early Urnfield associations. In the same volume of Germania Patay resolved the problem for certain groups of shields by publishing fragments of sheet bronze shields with bossed ornament in early Urnfield associations from: Nyírtura, Reinecke D/Ha A1 (1968, Taf. 31; Abb. 2); Bodrogkeresztúr, Ha A1 (*ibid.*, Abb. 1, 1); Keszőhidegkút, Ha A2 (*ibid.*, Abb. 1, 2-3), all Hungary; and Otok-Privlaka, Ha A1 (*ibid.*, 245, n.11), Croatia. The Nyírtura shield may be plausibly reconstructed with ornament almost identical to that on a Danish shield from Lommelev, Falster (Coles 1962, pl. XXX, below). On the same Danish island, two shields were found together at Sørup (Broholm 1946, 181 M.24; Coles

1962, pl. XXXI). The first bears ornament in concentric circles, alternately a rib and a circle of bosses; the second bears more complex ornament of thin ribs and bosses of different sizes. The first Sørup shield is similar in ornament and dimensions to a shield from Lough Gur, Co. Limerick (*ibid.*, pl. XXIX, below). The Punktbuckel ornament on the second Sørup shield suggests a Ha B1/MIV date (Butler 1963a, 130; Thrane 1975, 80, fig. 40, left). An unprovenanced Danish shield with Punktbuckel and bird-boat decoration and thin ribs is also assigned to this period by Thrane (*ibid.*; Coles 1962, pl. XXX, above). The Lommelev shield is presumably of Danubian origin and the first Sørup shield a British export (Thrane 1975, 81). Thrane suggests that the Lommelev shield was deposited later than its Danubian counterparts and that the Lough Gur shield was contemporary (*ibid.*). However, the Sørup association suggests that British production had begun by Ha B1/MIV. The most numerous group of British shields, the Yetholm type (Coles 1962, 165-169, 187-189) includes the Lough Gur shield (*ibid.*, 188 no. 32) and should also include the first Sørup shield; this type should have appeared during late LBA1, sometime before Ha B1.

Against this background may be considered the two Nipperweise shields from the Thames valley (List 77). Nipperweise shields have hitherto been found only in northern and western Germany and in adjacent Poland, for the eponymous find-spot, on the right bank of the Oder, is now in Poland where it is known as Ognica (Sprockhoff 1930a, 1-2, Taf. 1; Coles 1962, 162-163, 187, pl. XXVII, right). The Nipperweise shield which is often given the provenance Spalt, Ldkr. Schwabach, Franconia (Hennig 1970, 142 no. 165, Taf. 86-87), may be one of the shields from the R. Rednitz at Bamberg-Gaustadt, Franconia (*ibid.*, 60 no. 4; Reinecke 1956). The other shield from Bamberg was oval but it is now lost.

Nipperweise shields, of thick bronze with spaced concentric ribs, are related in technique and ornament to the shield from Plzen-Jikalka (Sprockhoff 1930a, 2, 18-20, Taf. 4; Coles 1962, 163, pl. XXVII, left) found some 50 cm away from a hoard eponymous for the transitional late Tumulus/early Urnfield horizon in Bohemia (Kytlicová 1964; von Brunn 1968, 110 n.1, 301; Jockenhövel 1974c, 61-62, Abb. 1). Association of the shield with the hoard cannot be proved (Kytlicová 1964, 555 n.5; Coles 1967, 152-153) but German scholars treat the shield as of early Urnfield date (Sprockhoff 1954, 73-74; Müller-Karpe 1962, 277; Schauer 1975b, 307). The Plzen shield has in its boss a U-shaped notch; this feature relates it to a series of sheet bronze shields sometimes known after a find from Herzsprung, Kr. Ostprignitz, Brandenburg (Coles 1962, 157; Sprockhoff 1930a, 6-8, Taf. 5) found mainly in southern Scandinavia (Coles 1962, 186, fig. 1). Coles insisted that these U-notched shields should be derived from eighth century Aegean shields (*ibid.*, 158, 171; 1967) and he has been followed by Gräslund (1967) and Thrane (1975, 74-75), while Bouzek has suggested that the notch could have been copied from earlier leather shields (1968, 316).

Coles compares Nipperweise shields to certain phalerae (1962, 163 n.2), late Urnfield Lake Village forms (von Merhart 1956, Abb. 5, 2; 7, 6) and the ältere mitteldeutsche group (*ibid.*, 104). Resemblance to the former is superficial but any relationship with the latter would, as Thrane has pointed

out (1975, 77), imply a date around Ha B1 for Nipperweise shields (see p. 149). Since the Aegean priority assumed by Coles can no longer be accepted, such a date for the appearance of Nipperweise shields may be entertained. To support an early Urnfield date for Nipperweise shields, Bouzek (1968) quoted circumstantial evidence for early Urnfield relations between northern Europe and the Aegean and the early Urnfield date of other classes of sheet bronze armour in central Europe.

A small group of British shields comprises examples of similar dimensions to the Nipperweise group, but decorated with large bosses. This is the Eynsham type (Coles 1962, 170-171, 190) and two of the four examples: Eynsham, Oxon., and Little Wittenham, Berks., were found within 16 km of the Nipperweise shield from Long Wittenham (List 77, 1). It seems possible that the Eynsham shields were derived from the Long Wittenham import. Coles proposed a late Urnfield date for Eynsham shields on the basis of resemblance to Lake Village phalerae (1962, 171 n.4-5; von Merhart 1956, Abb. 2, 2; 5, 6) but this resemblance is superficial and Eynsham shields should be earlier.

The Danubian shields discussed above bear bossed ornament which also occurs on the wooden shield in the Ha A2 burial from Wollmesheim, Kr. Landau, Rheinland-Pfalz (Coles 1962, 171; Krahe 1960, Abb. 6, 23; Schauer 1971, 168 no. 509; 169). This burial also contained an Erbenheim sword and it is possible that the diffusion of Nipperweise shields to England was connected with the diffusion of leaf-shape flange-hilted swords in Ha A2. It may be significant that three Nipperweise shields come from the Rhine-Main area (Coles 1962, fig. 1) where these swords are most common (Schauer 1971, Taf. 120B-121A).

Two sources have been established for British bronze shields. The first is east central Europe, via Denmark, for the Yetholm type and the second is the middle Rhine for the Eynsham type. The chronology of these influences is uncertain, but later LBA1 is possible for both.

Coles distinguished three other types of British shield. Harlech shields (1962, 169, 189-190, pl. XXXII, below) have spaced concentric ribs without bosses; he claimed that they were the insular type closest to the continental series and compared them to the Nipperweise type, but their diameters are consistently larger than those of Nipperweise shields. Size links Harlech shields with the Yetholm type and decoration with the Nipperweise type. Trent shields (*ibid.*, 169, 190, pls. XXXIII, below; XXXIV, upper right), with concentric corrugations, are probably derived from Harlech shields. Coveney shields (*ibid.*, 169-170, 190, pls. XXXII, above; XXXIV, lower left) have meandering ribs which may be distant imitations of the continental bird motif. Shields with V-shaped notches are discussed elsewhere (see p. 224).

Helmets. LIST 78.

This brief account is based on Hencken's recent study of the bronze helmets of the European Bronze Age (1971).

Several crested helmets (*ibid.*, 56-74) have been found in France, north almost to the Channel coast (*ibid.*, fig. 30). The examples from Montmacq and Paris (List 78, 2-4) probably belong to a workshop group represented in

France and Germany (*ibid.*, 56); there are two additional examples from Biebesheim, Kr. Gross-Gerau, Hesse (Jorns 1972). The Armancourt helmet is related to the hoard of nine from Bernières d'Ailly, Calvados (*ibid.*, 66-72, figs. 40-46), and probably belongs to another workshop group centred in northern France (*ibid.*, 57). Datable associations of crested helmets are scarce; typological relationship with Villanovan helmets leads Hencken to propose that the transalpine examples had appeared by the tenth century B.C. (*ibid.*, 57). The Pass Lueg find has been dated as early as Reinecke D (*ibid.*, 58); the Le Thiel helmet, if an associated find, has been dated equally early (*ibid.*, 62). Fragments of crested helmets occur in the hoards from Huelva, Larnaud and Vénat which could be as late as the beginning of Ha C (*ibid.*, 57). Blanchet and Lambot prefer a late Urnfield date for the Oise helmets (1975, 46). The LBA3 hoard from Nottingham Hill, Gloucs., contains four conical rivets (Hall and Gingell 1974, 308, fig. 4, 10-13); while these might be from helmets, conical rivets are known on British and Irish cauldrons (Leeds 1930, pl. VI, figs. 2-3; Hawkes and Smith 1957, 186).

The cap helmets (Hencken 1971, 124-144) from Mantes and Schoonaarde (List 78, 5-6) are part of a more scattered group than crested helmets (*ibid.*, fig. 94). The ridge on the Mantes helmet relates it to the crested group, so it may be a local product. Cap helmets probably lasted throughout the Urnfield period (*ibid.*, 124); the Wonsheim hoard (*ibid.*, 130, fig. 100) has been dated to Ha B3 (Hermann 1966, 204 no. 43).

There is a record of a helmet found with a late Urnfield solid-hilted sword at Picquigny, Somme (Gaucher and Mohen 1974, 80, 117, Picquigny 1). Hencken doubts the identification of the sheet bronze fragments in Boutigny hoard (132) as parts of helmets (1971, 183).

The distribution of crested helmets suggests that they were produced in northern France; the chronology of this production is uncertain, but it could have begun as early as LBA1.

Greaves. LIST 79.

Like many other sheet bronze artefacts of the Late Bronze Age, greaves have been the subject of a study by von Merhart (1956-57). The fragment from Saint-Pierre-en-Chastre (List 79, 1) is omitted from this study (*ibid.*, 92-94, Abb. 1), as from those of Gaucher and Robert (1967, fig. 51) and Schauer (1975b, 311). Von Merhart's early dating of some Italian greaves has been criticised by Snodgrass (1964, 86), who stressed Mycenaean priority, as shown by the find from Dendra.

Datable finds in central Europe show that greaves appeared there during the early Urnfield period. The hoard from Rinyaszentkirály, Hungary, is of Ha A1 date (Müller-Karpe 1962, 275; von Brunn 1968, 291) and the Ha B1 hoard from Beuron, Württemberg, contains fragments which probably belong to greaves (Müller-Karpe 1959, 167, Taf. 163A, 1, 3, 10-13; 1962, 275 n.61). Fragments comprising almost half of a greave appear in Cannes-Ecluse hoard II, Seine-et-Marne (Gaucher and Robert 1967, 205-210, figs. 46-48). None of the other objects in this hoard need be later than Bronze Final I/Reinecke D (Gaucher 1976, 580) but most occur with Ha A2 objects in the adjacent hoard I (see p. 99-100). The date of the Saint-Pierre-en-Chastre

greave is uncertain; most of the finds from this site are of late Urnfield date. The Cannes-Ecluse hoard demonstrates that bronze greaves were known in northern France during LBA1.

Corslets.

Corslets are included here to complete the discussion of bronze armour. Like greaves and helmets, corslets have been the subject of a study by von Merhart (1954). He defined a west-Alpine group (*ibid.*, 38), based on material published by Deonna (1934, 93-120). More recent study has been concentrated on an important group of finds from Slovakia and Hungary (Paulík 1968; Novotná 1970b, 56). Datable finds belong to Ha A1: Caka (von Brunn 1968, 298) and Ducové (Novotná 1970b, 56), Slovakia, and Kér (von Brunn 1968, 291), Hungary. The find from Cierna nad Tisou, Slovakia, is regarded as contemporary with these early Urnfield finds by Paulík (1968, 53), in contrast to Novotný (1966, 30-31) and Snodgrass (1971, 39) who consider it to be of late Urnfield date. This early dating allows Paulík (1968, 49, 53) to suggest that the similar corslet from the Saone at Saint-Germain-du-Plain, Saône-et-Loire (Deonna 1934, 117-120, figs. 26-28) is of early Urnfield date and Slovak origin. The other west Alpine corslets are probably of late Urnfield date (Paulík 1968, 61; Snodgrass 1971, 38-39), though Müller-Karpe (1962, 279) has proposed a Ha A date for the example from Grenoble, Isère (Deonna 1934, 112-113, fig. 22). Paulík's chronology is summarised in his table (1968, Tabelle I).

All of the types of bronze armour known in east central Europe during the early Urnfield period (Müller-Karpe 1962, Abb. 9; Schauer 1975b, Beilage 48, 3) were probably also known in western Europe at this time. Helmets and greaves are known from northern France and shields from Britain and Ireland. Schauer (*ibid.*, Beilage 50, 3) combines material from these two areas and introduces the Caka corslet which he also uses to illustrate early Urnfield armour in east and west central Europe (*ibid.*, Beilage 48, 3; 49, 2-3). Only helmets and shields were manufactured in western Europe.

ORNAMENTS

Poppy-head pins. LIST 80. MAP 34.

For many years, poppy-head pins have been regarded as characteristic of the earliest Urnfields in the west Alpine area (Kimmig 1941-47, 151-154, Karte; Gersbach 1962, 15 n.30). In southern Germany they belong to Reinecke D (Müller-Karpe 1959, 103, 144, 171) and in Switzerland to the contemporary Stufe 1 of Primas (1971, 56-58, abb. 12). In Alsace (Zumstein 1966, 40), the Jura (Millotte 1963, 120, 142) and further west (Kimmig 1951, 77; Sandars 1957, 116, 119-124, map VII), poppy-head pins appear in the earliest Urnfields of Bronze Final I. Poppy-head pins are less common on the Middle Rhine, where some examples are of Ha A date (Kubach 1977, 384; Hermann 1966, 30, Abb. 5, 4; Dohle 1970, 129, 252 no. 18, Taf. 21A, 8); they also occur in northern Italy (Carancini 1975, 49-51) and south-eastern France (Audouze and Courtois 1970, 22-24). Some of these peripheral examples may be local copies of Ha A date (Kubach 1977, 385).

During Bronze Final I poppy-head pins reached as far as the southern margins of the Paris Basin, e.g. Jonches, Yonne (Sandars 1957, 123, pl. VI, 8-9; Nicolas, Duval, Eluère, Mohen and Mordant 1975, 175), and the two examples from the Paris area might be equally early (List 80, 1-2). The later date possible for Middle Rhine poppy-head pins suggests that the example from Schoonaarde (List 80, 3) could be of Ha A date. These three pins have moulded ornament on the head and should probably be regarded as true poppy-head pins, but lack of a well-illustrated corpus prevents closer attribution.

The derivative pins differ from true poppy-head pins in form or ornamental technique. The Fort-Harrouard pin (List 80, 5) has a plain head, but its form and the ribs on the shaft should relate it to the poppy-head group. The Schoonaarde pin (List 80, 6) resembles the poppy-head pin with the same provenance (List 80, 3) but has incised ornament on its head. The Wichelen pin (List 80, 7) resembles some of the small poppy-head pins from northern Italy (Carancini 1975, 50 nos. 1717-1732). The Homington pin (List 80, 4) is a rather remote derivative. The chronology of these derivatives is uncertain, but all probably belong to LBA1.

Sandars (1957, 124) regards the pin with a flat biconical head from the Seine at Paris (List 93, 3) as a poppy-head derivative.

Pins with trumpet heads and ribbed swollen shafts. LIST 81. MAP 34.

Pins of this type appear to be characteristic of north-eastern France and adjacent areas. Graucher has named the more swollen form the Courtavant type and the more slender form the Saint-Gervais type (1976, 579, fig. 3, 2-3). The presence of loops on the example from Battel (List 81, 10) suggests a relationship with Picardy pins and Middle Bronze Age ribbed pins, such as those in the Hunstanton and Baux-Sainte-Croix hoards (List 37, 5, 9).

The Saint-Chéron and Bois-de-Lessines associations (List 81, 6, 12) indicate LBA1 dates; there are similar pins in the Reinecke D hoard from Eitlbrunn, Ldkr. Regensburg, Bavaria (Müller-Karpe 1959, 147, 286, Taf. 151C, 1; Kubach 1977, 329 n. 51), in a contemporary grave from Steinheim, Kr. Offenbach, Hesse (*ibid.*, 326 no. 772, 328-329), and in a Bronze Final I burial from Oberfeld, Eguisheim, Haut-Rhin (Zumstein 1966, 106, fig. 33, 179). The German pins have narrow ribs of concave profile related to collared pins (Hundt 1956, 52-53; Kubach 1977, 327). Kubach included the Baux-Sainte-Croix pin (List 37, 9) and the collared pin from Villeneuve-Saint-Georges (List 82, 3) among his list of pins with trumpet heads and ribbed swollen shafts (1977, 328 n. 33, 36), recognising the collared pin affinities of the latter. He dated most examples to Reinecke D (*ibid.*, 328-329). Rowlands has also related the two English examples (List 81, 1-2) to collared pins (1976, 202); both have angular ribs, but this feature had appeared on the Hunstanton pin (List 37, 5).

The cruciform ornament on the head of the Amiens pin (List 81, 8) may be related to that on the later LBA1 pins with biconical or sub-biconical heads and radiating ornament (see p. 237).

The pin with a swollen shaft from the Dover hoard (108) may belong to this type.

Collared pins. LIST 82. MAP 34.

Collared pins occur in the north Alpine area and in eastern France (Zimmermann 1969-70; Gallay and Huber 1972, 301-311; Courtois 1957, 266, fig. 2, carte C; Audouze and Courtois 1970, 12-15). Most examples belong to Reinecke D and the fragment in the Malassis hoard, Cher (Briard, Cordier and Gaucher 1969, 62, fig. 20, 192), which consists mainly of Bronze Moyen types, should belong to the beginning of Bronze Final I. Other French examples may be later (Audouze and Courtois 1970, 15).

The collared pin in the Saint-Just hoard (List 82, 2) should be of Bronze Final I date and of east or central French origin (*ibid.*, 14). The Morsang-Saintry pin is similar to the example in the Bronze Final I burial from the Faubourg Saint-Gervais, Auxerre, Yonne (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 152, fig. 6, 2), presumably eponymous for Gaucher's Saint-Gervais type (1976, 579, fig. 3, 3). The Villeneuve-Saint-Georges pin (List 82, 3) may be compared to the examples in the Bronze Final I hoard from La Poype, Reventin-Vaugris, Isère (Audouze and Courtois 1970, 12 nos. 33-34; Kubach 1977, 329). Thus, the three collared pins from north-eastern France should all be of French origin and early LBA1 date.

Pins with globular heads and incised ornament. LIST 83. MAP 34.

The two pins from the Paris area (List 83, 1-2) may be compared to an example from the Doubs at Pontoux, Saône-et-Loire (Bonnamour 1969, 79 no. 84, pl. XVIII) and another in the Bronze Final I hoard from La Poype, Reventin-Vaugris, Isère (Audouze and Courtois 1970, 22 no. 115), which is related to some of Kubach's Urberach pins of Reinecke D (1977, 345 n. 44, 349-352).

Guntersblum pins. LIST 84. MAP 34.

This type of pin is often known as the Mainz type. Guntersblum pins are distinguished by a broad head divided into three stages by horizontal grooves and collars of similar form on the neck. This is a common middle Rhine type of Reinecke D and the transition to Ha A (Kubach 1977, 370-381). There is a single Belgian example from Han.

Pins with bands of incised ornament on the shaft. LIST 85. MAP 34.

Butler (1969, 48) dates the Laren pin to the twelfth century, early Urnfield/MIII, and his caption states that its ornament is in north-east German style (*ibid.*, 54; List 85, 1). Such bands of incised ornament, lines, hatching and zig-zag, appear to be rare on pins from Mecklenburg and Pomerania, though there are similar motifs on a pin from barrow III, Friedrichsruhe, Kr. Parchim, Mecklenburg (Schubart 1972, 97, Taf. 16, G3), probably of MIII date. Bands of incised ornament are common on the shafts of MII pins from Silesia (von Richtofen 1926, Taf. 19-20; Kostrzewski 1970, Ryc. 41; Inv. Arch. PL142, 1; 145, 1). The Laren pin comes from the settlement eponymous for the final phase of the Hilversum culture in the southern Netherlands (see p. 280).

The Veenenburg hoard does not provide good dating evidence for the pins which it contains (List 85, 2). These may be compared to early MIII pins from Lower Saxony, a date consistent with that proposed by Butler for the Laren pin.

The pins from Gwithian, Cornwall.

The settlement site at Gwithian, Cornwall has produced fragments of two pins of probable early LBA1 date (Rowlands 1976, 203-204, pl. 19, 166; Megaw 1976, Appendix I). From site IX, house 1, layer 3, came two heads on broken shafts. The first has a pyramidal head divided into four stepped ribs, each notched; the shaft bears two panels of oblique lines, separated by double ribs. The second has a biconical head with six stepped ribs, all but the lowest notched; the shaft bears bands of oblique notches separated from a panel of hatched lines by triple and quadruple ribs.

The forms of the heads of these pins can be matched in Reinecke D burials from Thalheim, Zurich (Primas 1971, 56, Abb. 1), and Bennwihr, Haut-Rhin, burial 1 (Zumstein 1966, 40-41, 75-77, fig. 16, 34-35). These forms are not especially common; the biconical form is related to the poppy-head type. These continental pins have multiple grooved ornament on their shafts; the panels and ribs on the Gwithian pins may be compared to the ornament on the pin in the MBA2 hoard from Plaitford (List 37, 3).

Earlier LBA1 pins.

The only local pin type produced in north-eastern France during earlier LBA1 was the type with trumpet head and ribbed swollen shaft (List 81); there are also examples from Belgium and England.

The early Urnfield pins of Bronze Final I in eastern and central France are not common further north. There are poppy-head pins and collared pins (Lists 80, 82) from north-eastern France; poppy-head pins and derivatives also occur in Belgium and there is one remote derivative from England. The pins with globular heads from north-eastern France (List 83) may also be of south-eastern French origin.

In Belgium there is a single Guntersblum pin of middle Rhine origin (List 84), though Belgian poppy-head pins may have been derived from this area. Ornamented pins, perhaps of north-west German origin, occur in the southern Netherlands.

The Gwithian pins appear to be derived from early Urnfield forms, though their shafts show insular Middle Bronze Age influence, as do the angular ribs on the English trumpet-head pins (List 81, 1-2).

The chronology of the hoard from Villethierry, Yonne.

Now fundamental for the study of pins of the earlier part of the Late Bronze Age is the hoard from Villethierry, Yonne (Mordant and Prampart 1976). This hoard contains 488 pins, various other ornaments and a few fragments of tools, weapons and raw metal (*ibid.*, Tableau 3). The following forms of pin are represented: discoidal pins with angular profile, cylindrical profile or flat with a central knob; sub-biconical-headed pins with symmetrical or asymmetrical profile; pins with truncated sub-biconical heads with convex or straight-sided profile; pins with flattened convex heads with double collar; shepherd's crook pins; roll-headed pins (*ibid.*, fig. 12). Mordant and Prampart date the appearance of discoidal-headed pins to Bronze Final I; shepherd's crook pins and pins with flattened convex heads, alongside willow-leaf brooches

are dated to Bronze Final IIa, while pins with sub-biconical and rolled heads are dated to Bronze Final IIb (*ibid.*, 200). This Bronze Final IIb appears to allow a date as late as Ha B1 or LBA2 for the Villethierry hoard and evidence for the date of the deposition of the hoard in terms of the south German chronology is examined below.

Kubach, relying on an interim publication (Joly 1970, 452-458), considers that the Villethierry hoard is contemporary with the Reinecke D/Ha A1 hoard from the Rhine at Mainz (1973a, 302; 1977, 391, 403, 405, 449; Betzler 1974, 46). He places the pins with flattened convex heads in his Escherheim variant of the Wollmesheim type (1977, 426 n. 24), but the definitive publication of the Villethierry hoard indicates that they are closer to his Eschollbrücken variant (Mordant and Prampart 1976, fig. 89; Kubach 1977, 422-423, Taf. 67, 995-1002) of ill-defined Reinecke D and Ha A date (*ibid.*, 439-440). Willow-leaf brooches probably appeared during Reinecke D; they were certainly current in Ha A1 and may have lasted longer (Betzler 1974, 45-46). Mordant and Prampart cite German evidence of a Ha A2 date for the Villethierry discoidal-headed pins (1976, 156): Eschborn, Main-Tanus-Kr., Hesse (Kubach 1977, 452 no. 1100), and Wollmesheim, Kr. Landau, Rheinland-Pfalz (Krahe 1960, Abb. 6, 3; Schauer 1971, 170), but these are different from the Villethierry pins, biconical without the convex profile of the upper part of the Villethierry pins. Comparison with the large biconical headed pins from Villethierry (Mordant and Prampart 1976, figs. 65-76) does not appear to be precise. The Villethierry pins with sub-biconical heads are also compared to Ha A2 pins (*ibid.*, 158) from Stuttgart-Bad Canstatt, Württemberg (Dehn 1972, Taf. 5D, 3), and Gernlinden, Ldkr. Fürstentfeldbruck, Bavaria (Müller-Karpe 1959, Taf. 189B, 3). The Stuttgart pin appears to have a trumpet-shaped, not sub-biconical, head; the Gernlinden pin is more relevant, associated with a Ha A2 knife like those in hoard I from Cannes-Ecluse, near Villethierry (Gaucher and Robert 1967, figs. 21; 23, 1). The Ha A2 comparisons for the Villethierry pins with flattened convex heads are not convincing (Mordant and Prampart 1976, 160; Müller-Karpe 1959, Abb. 39, 2-3; Hermann 1966, Abb. 5, 27). The Ha A2 pins with spindle-whorl heads from Hesse (*ibid.*, Abb. 5, 15-16; Kubach 1977, 364 nos. 892-895; Mordant and Prampart 1976, 159) have broad biconical heads with straight-sided profile distinct from any Villethierry form.

Comparison with German evidence emphasises the Reinecke D and Ha A1 content of the Villethierry hoard and minimises Ha A2 elements. Villethierry represents a local tradition of Bronze Final IIb, but this should certainly be dated earlier than the beginning of Ha B, like Cannes-Ecluse hoard I (see p. 99-100) contemporary with the later part of LBA1.

Wollmesheim pins. LISTS 86-87. MAP 35.

A heterogeneous group of early Urnfield pins having broad convex heads with collars below has often been treated under the general title of 'Binningen' or 'Urnfield' pins (Kubach 1977, 407). A more detailed typology has been elaborated by Kubach; the Binningen type is restricted to pins with convex, mushroom-shaped heads and three to five broad, well-defined collars separated by distinct zones (*ibid.*, 415-422). Binningen pins are found mainly in the north Alpine area, with a few examples from the middle Rhine (*ibid.*, Taf. 104A). The pin from Temse-Veldmolenwijk (List 87, 2) is included in a

group of related pins with a single rib (*ibid.*, 416 n. 7) and the Schoonaarde pin should belong to the same group (List 87, 1). Binningen pins are mostly of Reinecke D/Ha A date, though some may be later (*ibid.*, 419-421).

Wollmesheim pins have heads larger than Binningen pins, convex, sub-biconical, mushroom-shaped or onion-shaped, with one to six collars, angular or convex, sometimes ill-defined (*ibid.*, 422). Kubach has defined several variants and the Opheusden pin (List 86, 4) is placed in the Kleinblittersdorf variant (*ibid.*, 424 n. 21) which appeared in Reinecke D (*ibid.*, 441). The Alem pin has the same asymmetrical collar profile as the Kleinblittersdorf variant (List 86, 3) and this feature also characterises the Wollmesheim pins in the Villethierry hoard (Mordant and Prampart 1976, 110, figs. 88-89), though these pins probably belong to the Eschollbrücken variant (see p. 235).

Wollmesheim pins are predominantly a middle Rhine type with a sparse distribution west to the Paris Basin, where only three examples occur in the Villethierry hoard, and a scatter on the lower Rhine and Scheldt (Map 35; Kubach 1977, 446-450, Taf. 103, 104B-105). Some examples have a Reinecke D date but most are Ha A (*ibid.*, 446).

Pins with biconical or sub-biconical heads and radiating ornament. LIST 88. MAP 35.

These pins, discussed by Audouze (1971), belong to the type which is the most numerous in the Villethierry hoard (Mordant and Prampart 1976, 73-103). Radiating ornament is usual on the first variant of pins with sub-biconical heads in the hoard, those with an asymmetrical profile (*ibid.*, figs. 61-66), of which there are forty-five examples. This type is found throughout the Paris Basin (*ibid.*, fig. 174) and various contexts, including Fort-Harrouard (List 88, 2), give a Bronze Final Ib date (*ibid.*, 158-159) which Villethierry should place within Ha A.

Shepherd's crook pins. LIST 89. MAP 35.

Shepherd's crook pins are common in France, especially in the Paris Basin where fifty-six examples occur in the Villethierry hoard (Cordier 1972, 86-88; Mordant and Prampart 1976, 122-127, fig. 175; Kubach 1977, 394 n. 40); the form originated in Saxony and adjacent areas (Coblentz 1952, 89-96, Karte 8), where it appeared at the beginning of the Urnfield period and lasted to Ha B1 (von Brunn 1968, 199). In south-western Germany shepherd's crook pins were known during Reinecke D (Müller-Karpe 1959, 171) and in Hesse (Kubach 1977, 391-392) and the Neuweid Basin (Joachim 1973a, 191-192, Abb. 1) during Ha A. Kubach has claimed that some French finds are of Reinecke D date (1977, 375) but Mordant and Prampart place none before the beginning of Bronze Final II (1976, 162).

The shepherd's crook pin from Dinorben (List 89, 1) is presumably of French origin, not earlier than Bronze Final II/Ha A.

Pins with spindle-whorl heads. LIST 90. MAP 33.

These pins have biconical heads, sometimes truncated, with straight-sided profiles, often bearing horizontal ornament; they form a heterogeneous, widespread group of early Urnfield date. Examples from Peschiera (Carancini 1975, 44 nos. 1565-1571, 1573-1574) were used by Müller-Karpe to date

Bavarian examples to Reinecke D (1959, 145, 149, Taf. 104, 9-10; 188A, 1). A single example from Cortaillod, Neuchâtel, is illustrated by Ruoff (1974, 50, Abb. 19, second right) among many other pin types of Ha A2 (*ibid.*, 27, Abb. 19-20; Taf. 30, 31-32). Most simple examples from Hesse also belong to Ha A2 (Hermann 1966, 30, Abb. 5, 7; Kubach 1977, 363-368). French examples do not appear before Bronze Final II and some are later (Audouze and Courtois 1970, 19; Mordant and Prampart 1976, 159-160). The finds of pins with spindle-whorl heads from northern France (*ibid.*, fig. 174; List 90) should be related to the eight examples in the Villethierry hoard (*ibid.*, 110, figs. 86-87) and be of later LBA1 date.

Pins with broad ribbed biconical heads. LIST 91. MAP 35.

Despite their general resemblance to pins in the Villethierry hoard, the two pins with broad ribbed biconical heads from Paris (List 91, 2-3) are difficult to match. The first is close to a single Villethierry pin (Mordant and Prampart 1976, 103, 160, figs. 83-84) and the second to an unprovenanced pin in Auxerre Museum (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 190 no. 123). Probably related is the Schwabsburg form found on the middle Rhine (Kubach 1977, 452-454) and the Ha A2 date of this form accords with the date of the Villethierry hoard. There is a pin similar to the larger Paris example (List 91, 2) in a burial from Heimbach-Mittelweg, Kr. Neuweid, Rhineland (von Uslar 1939, 13-14, Abb. 2, 2; Dohle 1970, 129-130, 256 no. 197, Taf. 19, 9), probably of Ha A2 date (Desittere 1968, 12; Jockenhövel 1971, 110).

The pin from Cambridge (List 91, 1) is probably contemporary with the pins discussed above and may be compared to a small group of Ha A2 pins on the middle and upper Rhine (Kubach 1977, 473), especially to the example from Pfungstadt, Kr. Darmstadt, Hesse (*ibid.*, 471 no. 1180). Two similar pins from Anjou have broader heads (Cordier and Gruet 1975, fig. 47, 1-2).

Pins with broad convex heads. LIST 92. MAP 35.

Pins with broad heads, convex above and conical below an angular profile, are common in the Villethierry hoard; there are two variants, on the first the junction between the head and the shaft is marked by steps, on the second it is smooth (Mordant and Prampart 1976, 23-47, figs. 17-32, 34-43, 46-55). This form perhaps appeared during Bronze Final I and was still current late in Bronze Final II (*ibid.*, 154-156). There are similar pins in the Reinecke D/Ha A1 hoards from the Rhine at Mainz (Kubach 1977, 399 no. 972) and Stockheim, Ldkr. Gunzenhausen, Franconia (Müller-Karpe 1959, Taf. 156, 4; Kubach 1977, 404).

The two examples from north-eastern France (List 92, 1-2) should be derived from further south. The pin from Gasteren (List 92, 3) is from the site eponymous for an important group of cemeteries of the Late Bronze Age in the northern Netherlands (Butler 1969, 82; Waterbolk 1962, 15-18, Abb. 5-9). Butler has proposed a south German origin and a Ha B1 date for the Gasteren pin (1969, 82, aff. 32; Waterbolk 1962, 18 n. 31). The ornament on the Gasteren pin is very similar to that on some pins from Villethierry (Mordant and Prampart 1976, figs. 53-54, 92) and a French origin and Bronze Final II/Ha A date should be substituted. This could raise the initial date of Gasteren urnfields into Ha A.

Pins with flat biconical heads. LIST 93. MAP 35.

Pins with flat or truncated heads with biconical profile occur in northern Italy where they are known as the Tragno type (Carancini 1975, 49 nos. 1698-1707). Examples with ribbed, as opposed to incised, ornament on the head belong to Ha A1 in Bavaria (Müller-Karpe 1959, 153, Taf. 184D, 5). Simpler examples are known from the same period in south-western Germany (ibid., 172, Taf. 205B, 13). Such pins occur throughout Ha A in Hesse (Kubach 1977, 460-465).

The ornament on the Paris pin in the Ashmolean Museum (List 93, 3) bears slight resemblance to that on some poppy-head pins and this led Sandars (1957, 124) to regard it as a derivative poppy-head pin. Whether it and the other example from Paris (List 93, 4) were so derived or related to south German Plattenkopfnadeln, a later LBA1 date seems likely. The two pins from the Thames (List 93, 1-2) have a notched rib around the head; this should relate them to a small group of pins from Hesse (Kubach 1977, 461 nos. 1128-1133) dated to Ha A (ibid., 463-465).

Later LBA1 pins.

The following forms should be of Bronze Final II/Ha A date, that is later LBA1: Wollmesheim and related pins (Lists 86-87); pins with biconical heads and radiating ornament (List 88); shepherd's crook pins (List 89); pins with spindle-whorl heads (List 90); pins with broad convex heads (List 92); pins with flat biconical heads (List 93). The Ha A2 Landau pin in the Isleham hoard (127) was deposited during LBA2.

The Wollmesheim and related pins of upper and middle Rhine origin occur in the lower Rhine area, not in north-eastern France. The Landau pin from Isleham is of middle Rhine origin and the pins with flat biconical heads from Paris and London could come from the same area. The other pins from north-eastern France can all be compared to examples in the Villethierry hoard and pins with biconical heads and radiating ornament, shepherd's crook pins, pins with spindle-whorl heads and pins with broad convex heads could all be local Paris Basin types. Pins with broad ribbed biconical heads resemble middle Rhine types as well as pins from Villethierry; the pin of this form from Cambridge should be a middle Rhine type. Only the shepherd's crook pin from Dinorben of the British later LBA1 pins appears certainly to be of French origin. Also of French origin is the pin with a broad convex head from Gasteren in the northern Netherlands.

Bracelets. LIST 94.

Bracelets, characteristic ornaments of MBA2, are rare in LBA1 contexts. The twisted bracelet in the Bois-de-Lessines hoard (List 44, 7) is probably of early LBA1 date. The decorated bracelet in the same hoard (List 94, 3) and the pair in the Anzin hoard (List 94, 1) are probably contemporary, related to the Nieder-Flörsheim type of Reinecke D (Richter 1970, 107-111).

Only a single isolated find of a bracelet can tentatively be assigned to LBA1, though a Bronze Final I date has been claimed for the bracelet from Boulogne (List 45, 2; see p. 88). Pennannular bracelets with triangular sections and geometric incised ornament appear to have been current through-

out the Late Bronze Age in France (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 169-171, fig. 12, 72-74) but they appeared during Bronze Final I, e.g. in burial 101 at La Colombine, Champlay, Yonne (Lacroix 1957, 58-60, figs. 36-39; Eluère 1974, 559). There is pointillé ornament on a bracelet in the Bronze Final II hoard from Carlipa, Aude (Guilaine 1972, 242, no. 15, fig. 84, 8). The bracelet from Lacroix-Saint-Ouen may be LBA1, though it could be later (Blanchet and Lambot 1975, 38).

Belt ornaments. LIST 95.

The example from Morsang-Saintry belongs to sub-type 4 in the typology of Audouze (1974, 238-239). The only other example of this sub-type is in a Bronze Final I burial from Cremieu, Isère (*ibid.*, 257 no. 33, fig. 4, 13; Schauer 1975a, 50, Abb. 5A, 5), but the precise date of the Morsang-Saintry piece is uncertain (Audouze 1974, 246). The main distribution of such moulded belt ornaments is in eastern central France (*ibid.*, carte 1).

Razors.

Burgess (1974, 205) cites bifid razors as a type common to Britain and northern France during the Penard phase. The Rosnoën hoard contains a razor with a small circular notch (Briard and Giot 1958, 24, pl. I, 2; Burgess 1968a, fig. 4, 7) and other razors of this form are known from Brittany (Briard 1965, 160, fig. 53) and from Britain (Burgess 1968a, fig. 4, 9). Burgess appears to suggest that bifid razors (Piggott 1946, 126-128) appeared only in this phase (Burgess 1968a, 34, fig. 4, 7-9), to which he assigned the razor from South Lodge Camp, Berwick St. John, Wilts. (*ibid.*, fig. 4, 8). Bifid razors are not common in north-eastern France, though three occur at Fort-Harrouard (List 48, 1); these have broad notches and could be Middle Bronze Age (see p. 91).

There is an early Urnfield razor from the Seine at Paris (Ash 1927.1043; Fig. 38, 26) which Jockenhöval (1971, 132 n.1) has assigned to his Neckarmühlbach variant. These razors have a penannular blade and an openwork handle with a ring terminal; they belong to Ha A2 and are the most westerly of a widespread central European group (*ibid.*, 130-132, Taf. 45B). The stone mould for Neckarmühlbach razors from Priest, Kr. Bitburg, Rheinland-Pfalz (*ibid.*, 131 no. 221), also bears a matrix for Ha A2 knives, another central European form which reached the Paris Basin (see p. 99).

Brooches

From Ixworth, Suffolk, there is a fragment of a brooch of central European form, with a spiral foot and part of an oval bow with linear ornament (Ridgeway and Smith 1905-07, 108-109, fig. 12; Harden 1952, fig. 2, 4; Butler 1963a, 147-148). Harden lists it as the only find of a 'German' brooch from Britain (1952, 316). One of the comparative examples illustrated by Ridgeway and Smith (1905-07, 109, fig. 13) represents the type to which it belongs; this is one of two similar brooches from Heidesheim Kr. Frankenthal, Rheinland-Pfalz (Betzler 1974, 54 nos. 114-115), eponymous for the type, which is not a common one. The other examples come from Brandenburg (Sprockhoff 1938, Taf. 83, 4, 16; 84, 20) and the type is dated to MIII/Reinecke D - Ha A (Betzler 1974, 55). Several more exotic finds are said to have been found at Ixworth (Ridgeway and Smith 1905-07, 106-108; see p. 263) and the provenance does not inspire confidence.

LBA1: SUMMARY

The palstave was still the dominant tool type in southern Britain during LBA1; palstaves occur in many British hoards of this phase, but never in such large numbers as in MBA2 hoards except at Dover, where all the palstaves could be imports. Other palstaves from southern Britain are derived from MBA2 forms and imports cannot certainly be identified. Rosnoën palstaves were predominant in north-western France while the median-winged axe, of west-Alpine origin, was the most common tool type in north-eastern France and on the lower Rhine and Meuse valleys. Only in the Dover hoard do median-winged axes occur in quantity in Britain. Production on a small scale of socketed axes continued from MBA2 throughout LBA1 in southern Britain; only rare examples of unlooped axes in northern France can be attributed to LBA1.

Early Urnfield tanged knives, most probably of Ha A2 date, occur in north-eastern France, Belgium and southern Britain.

Pegged spearheads re-appeared in Britain early in LBA1, probably under French influence; the contemporary pegged spearheads of north-eastern France are probably related to Rosnoën spearheads of Brittany. Basal-looped spearheads with straight-based blades are a characteristic British type of LBA1; continental finds are widespread, but most are found in the area from the Seine to the Scheldt. Finds of conical ferrules in Britain probably represent influence from central Germany towards the end of LBA1.

Bronze arrowheads could have appeared in north-eastern France, Belgium and southern Britain during LBA1 as a result of Urnfield influence.

Swords provide more extensive evidence than any other LBA1 type. Rapiers continued to be produced in Britain but were rare elsewhere. Rosnoën swords were dominant in north-eastern France during early LBA1 while straight-blade rapiers were dominant in Britain, where Rosnoën swords are scarce. A few straight-bladed flange-hilted swords and Rixheim swords of west central European origin reached north-eastern France, Belgium and the Netherlands while straight-bladed rod-tanged swords in these areas were derived from northern Italy and the west-Alpine area. Various local hybrids were produced on the continent. Some of these foreign types may have reached Britain in the Dover hoard but, apart from Rosnoën swords, undoubted imports of Bronze Final I/Reinecke D date are unknown. Rod-tanged swords with leaf-shaped blades appeared during Ha A1 and were probably produced in the Paris area, whence one was exported to London. These swords were of north Italian and west-Alpine inspiration; there is a single early Urnfield solid-hilted sword from north-eastern France and one rod-tanged sword of Unterhaching type is also of German origin. Various experimental swords were produced in Britain, reflecting continental developments, but leaf-shaped swords and rapiers should not have appeared before Ha A1, Ballintober, Chelsea and Cutts types. Several of these swords have been found on the continent, and one straight-bladed

solid-hilted sword of Appleby type. Flange-hilted swords with leaf-shaped blades did not become common until Ha A2. The Hemigkofen type and its variants reached north-eastern France, Belgium, the Netherlands, Britain and Ireland and Erbenheim swords have been found in most of these areas; Letten swords, especially common in the Paris area, are absent from Britain and the Netherlands. All these types of flange-hilted sword seem to have been inspired from the middle Rhine and a variety of local imitations was encouraged in Britain. The leaf-shaped flange-hilted sword was established by the end of LBA1 as the dominant form of sword throughout the rest of the Late Bronze Age in Britain and northern France.

The appearance of bronze armour in western Europe can be placed in LBA1 though greaves and corslets were imported from central Europe and reached only as far as France while shields were manufactured in Britain and helmets in France. Two Nipperweise shields were imported to the Thames valley, probably from the middle Rhine in Ha A2. Sheet bronze shields with bossed ornament probably reached Britain from the Carpathian area, via Denmark, before the start of Ha B. Bronze helmets were produced in northern France possibly as early as LBA1.

Local production of pins in north-eastern France continued from MBA2 with early LBA1 pins with trumpet head and ribbed swollen shaft, which also occur in England and Belgium. Early Urnfield poppy-head pins and collared pins reached north-eastern France and poppy-head pins also occur in Belgium, where there is a single Guntersblum pin of Middle Rhine origin. Decorated pins with north-west German relations occur in the southern Netherlands. There is no earlier LBA1 pin of true early Urnfield origin in Britain; the Gwithian and Homington pins are derivatives. In later LBA1 there is the Landau pin of middle Rhine origin from the LBA2 Isleham hoard, with the London and Cambridge pins perhaps from the same area, and the Dinorben shepherd's crook pin of French origin. Wollmesheim and related pins of middle Rhine origin occur on the lower Rhine. Most pins of later LBA1 in north-eastern France are probably local products; one reached Gasteren in the northern Netherlands. Apart from pins, ornaments of LBA1 date are very rare.

Hoard of LBA1 date (Map 36) are much rarer than MBA hoards (Map 22) and the large hoards of tools so characteristic of MBA2 have almost disappeared. The south coast of England and the lower valley of the Seine, areas rich in MBA2 hoards, are devoid of LBA1 hoards. Finds of isolated objects are concentrated in two areas of southern Britain, the lower Thames valley and the south-eastern margins of the Fens (e.g. Map 27). In north-eastern France large hoards appear only on the Marne in the same area as the most northerly Urnfield burials. This is Gaucher's Saint-Gervais group (1976, 577-580) representing Urnfield influence in the east of the Paris Basin and he stresses the probability of survivals from the Middle Bronze Age. Bronze hoards appeared in Belgium for the first time during LBA1 but material of this phase from the Netherlands is very scarce.

Analysis of bronzes shows a consistent content over a wide area of Britain and northern France during LBA1, though new compositions were introduced by leaf-shaped flange-hilted swords (J. P. Northover).

The division of LBA1 into an earlier and a later phase in Britain, recognised by Burgess (1976a, 72-75, fig. 4, 9) and Jockenhövel (1975, 140-149), may be elaborated on the basis of the preceding discussion (Table 10). Types which should not have reached Britain before Ha A2 may be separated from types which should have been current during Reinecke D and hoards divided into two groups according to their contents. The typology of the sword in the Eriswell hoard suggests an intermediate position which could be shared by the Southchurch find.

Table 10

<u>Reinecke D/Bronze Final I</u>	<u>Ha A1/Bronze Final IIa</u>	<u>Ha A2/Bronze Final IIb</u>
Dover	Eriswell	Penard
Appleby	Southchurch	Ffynhonnau
Burrougham		Ambleside
Eglwyseg		
Maentrwrog		
Orsett		
Straight-bladed swords		
Straight-based basal-looped spearheads	Leaf shaped rod-tanged swords	Leaf-shaped flange-hilted swords
Median-winged axes		Urnfield knives
		Conical ferrules
		Arrowheads
		Bronze armour

CHAPTER 5

LATE BRONZE AGE 2

LATE BRONZE AGE 2

LBA2 is the phase of the Late Bronze Age in southern Britain characterised by the contents of the Wilburton hoard (129); it is usually known as the Wilburton phase (Burgess 1974, 207-209), although the hoard from Isleham (127) contains a much greater quantity of material than the hoard from Wilburton. The first modern definition of this phase was that of Savory (1958a, 28-32), though Montelius had included much Wilburton material in Period IV of his classification (1908, 39-46). The sparse northern contacts of LBA2 were Butler's Bargerosterveld phase (1963a, 223-226). The continental relations of the Wilburton complex have also been discussed by Savory (1964-66, 182-187) and by Burgess (1968a, 9-13), who equated it with Bronze Final II in Brittany, Briard's Saint-Brieuc-des-Iffs phase (1965, 175-198). Throughout northern France, Bronze Final II hoards contain many types common to the Wilburton phase, and northern Bronze Final II is contemporary with only the later part of Bronze Final II in central and eastern France (see p. 31-32).

The presence of Wilburton material has been used to define contemporary phases in northern England (Burgess 1968b, 29-34), Scotland (Coles 1959-60, 22-26) and Ireland (Eogan 1964, 288-293) and LBA2 material from France or Britain found in the south of the Low Countries has been collected by Desittere (1976, 80-81, Liste 2, fig. 2).

Evidence for the relative chronology of LBA2 is sparse, with imports or exports rare. The typology of LBA2 flange-hilted swords is the principal indicator of chronology; these swords should not have appeared until after the LBA1 flange-hilted swords of Ha A2 origin. Swords, and kidney-shaped bracelets, suggest a Ha B1 correlation for LBA2, though the chronology of the end of this phase is obscure (see p. 31-32, 157).

Analysis of objects in the LBA2 hoards from Blackmoor, Nettleham and Wilburton showed that almost all these objects belonged to the group with more than 1% lead content (Brown and Blin-Stoyle 1959, appendix nos. 112-124, 200-206, 253-281) and a few objects from Wilburton contained more than 15% lead (*ibid.*, nos. 453-461). This technological criterion has subsequently been used to define the beginning of the Late Bronze Age in southern Britain (*ibid.*, 195; Burgess 1968a, 9; 1974, 207-208), though I have found it more suitable to begin the Late Bronze Age in the phase preceding Wilburton for my purposes of comparison with the continent (see p. 95).

TOOLS

Palstaves. LIST 96. MAP 37.

In her fundamental study of British palstave typology Smith defined the form characteristic of the later Bronze Age in England and Wales (1959, 176-177, fig. 7, 4). Invariably looped, it is short and narrow compared with earlier British forms; especially distinctive are the flanges, very low,

straight or slightly concave, extending only a short way up the butt, and the stop-ridge, which often projects beyond the flanges. These palstaves may be undecorated or may have vertical ribs or grooves on the blade and, sometimes, in the septum.

This form is known as the 'late type'. Savory had already plotted its distribution in Wales and shown that it was most common in the north-west, where the undecorated form was dominant (1958a, 33, fig. 13); the same author later provided a more comprehensive distribution map (1964-66, 185-186, fig. 9) showing that the undecorated form also occurred on the south coast of England and the decorated form in East Anglia, Wessex and along the Bristol Channel. Continental examples were mainly from western and central France (*ibid.*); Butler had identified a few examples from northern Europe (1963a, 69-70).

Late palstaves appeared during the Wilburton phase but occur also during LBA3 in southern England and Wales (Davies 1967, 98; Burgess 1968a, 9-10, 36; 1974, 208, fig. 31, 6; Burgess, Coombs and Davies 1972, fig. 3), while in northern England they appeared during the LBA2 Wallington phase but were more common during LBA3 (Burgess 1968a, 40; 1968b, 14, 31). Characteristic LBA2 hoards containing late palstaves are: Wilburton (129), Isleham (127), Guilsfield (131) and Nettleham, Lincs. (Davey 1973, 96, fig. 29); LBA3 hoards with late palstaves include: Forty Acre Brickfield, Worthing, Sussex (Inv. Arch. GB37), Stogursey, Somerset (McNeil 1973), and Stuntney Fen, Cambs. (Clark and Godwin 1940).

The palstaves of Bronze Final II in Brittany were more massive than the British late type and usually decorated with a thick midrib (Briard 1965, fig. 60, 1-6), derived from the Rosnoën type (*ibid.*, 180; see p. 96). The British late type is distinct from the Bronze Final II type common in north-western France (Burgess 1968a, 9; Briard and Verron 1976a, 105-107). Where it is possible for me to distinguish, most palstaves in Bronze Final II hoards from north-eastern France also appear to be massive French forms (List 96, 3, 6, 8) and the example in the Combon hoard (List 96, 2) is probably also of this form. British forms appear in the Canteleu hoard (List 96, 6; Fig. 49C, 1-2) and are also represented by isolated examples (List 96, 4, 7, 9); some isolated finds of Rosnoën palstaves (List 50) could be of LBA2 date. There are two examples of British late palstaves from Belgium (List 96, 10-11) and two more in the Bargerroosterveld 1900 hoard (List 96, 12) which could be of LBA3 date.

There is a British late palstave in a find from Barrien-Bulten, Kr. Grafschaft Hoya, Lower Saxony (Nowothnig 1962), associated with a double-T-hilted knife (see p. 138) this find could be LBA2 though a later date is possible. The palstaves from northern Spain cited by Savory (1964-66, 186 n. 5) do not appear to be characteristic British late forms.

Savory has discussed the origins of British late palstaves. At first he inclined towards a Welsh origin (1964-66, 186), but he has subsequently postulated central France as their area of origin (1975, 112-114). He cites the looped palstaves in the Middle Bronze Age hoard from Teillet-Argenty, Allier (see p. 46), and the small looped palstave in the Bronze Final I hoard from

Kergoustance, Finistère (Briard 1965, fig. 50, 4). This seems to imply that undecorated British late palstaves are small versions of Rosnoën palstaves or copies of the rare small, undecorated palstaves of that phase. This argument appears to founder on the dearth of Rosnoën palstaves from Britain outside the Dover hoard (108). Late palstaves can surely be seen as a typological development from British LBA1 palstaves demonstrated in the Wallington phase hoards from Shelf and Roundhay, Yorks. (Burgess 1968b, 14, figs. 6, 10; 7, 1f). It seems unnecessary to derive the late palstaves of north Wales from western France as Savory has done (1975, 113-114).

Winged Axes. LIST 97. MAP 28.

During Bronze Final II winged axes were used alongside palstaves in northern France (Briard 1965, 180, fig. 60, 7-8; Gaucher and Mohen 1974, 54; Briard and Verron 1976b, 23). The form of these winged axes is intermediate between the massive median-winged axes of Bronze Final I and the slender end-winged axes of Bronze Final III (Briard and Onnée 1972, 32). The Caix hoard (List 97, 11) includes two variants, the short looped median-winged axe, smaller than its Bronze Final I predecessors, and the larger un-looped axe with longer wings set higher up the axe (Gaucher and Mohen 1974, ill. 33). These variants have been designated as 'developed median-winged axes' and 'primitive end-winged axes' by Burgess (1968a, 36). Axes with high-set wings were current in Bavaria and south-western Germany during Ha B1 (Müller-Karpe 1959, 167, Abb. 41, 5; 178, Abb. 42, 13).

Bronze Final II winged axes occur in most hoards of this phase in north-eastern France (List 97, 1-4, 8-9, 11) and a few isolated examples are known (List 97, 5, 7, 10). Winged axes are absent from British hoards of LBA2 and no isolated examples of Bronze Final II form are known to me. The winged axes in the Berg-en-Terblijt hoard (209) may be of LBA2 origin.

Socketed axes. LISTS 98-100. MAP 39.

Socketed axes without indentation occur in the British LBA2 hoards from Isleham (127), Wilburton (129), Guilsfield (131) and Ulleskelf, Yorks. (Burgess 1968b, fig. 21, 4); these axes have square mouths with multiple collar mouldings. These features can be derived from LBA1 and MBA2 axes, cf. the axe in the Leopold Street, Oxford, hoard (List 14, 3) with multiple collar moulding. Axes similar to those in the LBA2 hoards are found in northern England (Burgess 1968b, 14-15, 31) though Burgess regards only the example in the Lowthorpe hoard, Yorks., as a Wilburton type (*ibid.*, 29-31, fig. 21, 3), though the triple moulding on the axe from Kirkstall Road, Leeds, Yorks. (*ibid.*, fig. 11, 3), can be matched on the axe in the Isleham hoard (Fig. 44, 19). There is an isolated find of a LBA2 axe with multiple collar moulding from Undley, Suffolk (CMAE 95.57; Fig. 51, 3). An axe in the Guilsfield hoard (131) has cord-moulding on its collar.

There are socketed axes with plain collars in the LBA2 hoard from Wallington, Northumberland (Burgess 1968b, 15, fig. 9, 12-15), and similar axes occur in Ireland (*ibid.*, fig. 12, 3-6) where Eogan has placed them in his LBA2 Roscommon phase (1964, 290, fig. 11, 3). These axes are derived from LBA1 forms (see p. 98) and, while they are unknown from LBA2 contexts in southern Britain, some of the examples listed as LBA1 (List 52) could be later.

The form of the axe with a shouldered blade from Swaffham (List 98, 1) suggests that it is a LBA2 type and this form may be related to that of indented axes from ? Norwich, Norfolk (Norwich 1966, 20, fig. 49), and the Ulleskelf hoard, Yorks. (Burgess 1968b, fig. 21, 4), which both have shouldered profiles. Shouldered axes are not common in Britain, though shouldered adzes are known (see p.136-7); shouldered axes occur in Ireland (Eogan 1964, fig. 11, 6). French examples (Briard and Verron 1976b, 75-76) include examples with square mouths in the Pontpoint hoard (List 98, 2) and from Amiens (List 98, 3) and these should be of LBA2 date.

Also common to Britain and France are socketed axes with concave indentations in their sides. Only about ten British finds are known (Burgess 1968a, fig. 8), but there are examples in the LBA2 hoards from Isleham (127), Wilburton (129), Nettleham, Lincs. (Davey 1973, 96, fig. 29, 267-268), and Ulleskelf, Yorks. (Burgess 1968b, fig. 21, 4). The two examples said to be from the R. Ribble (*ibid.*, 29, 64, fig. 21, 2) may not be from a hoard (Davey and Forster 1975 nos. 160-161) though both of the Ribble axes have the multiple collar mouldings characteristic of the LBA2 associated finds of indented axes.

Indented socketed axes are also known from France (Savory 1964-66, 185; Briard and Verron 1976b, 73-74) where they occur in hoards of Bronze Final II, e.g. Boutigny I (List 99, 1), and Bronze Final III, e.g. Déville (List 99, 3). They appear to be absent from Brittany but occur throughout the rest of France. Savory favoured southern France for the origin of indented axes but most of these axes are unlooped with plain collars and rounded mouths and they also lack the ribs which outline the indentations of most British axes: Isleham, Wilburton, Ulleskelf, one of the Nettleham axes and two unprovenanced examples (CMAE RC.2.3.80; Fig. 51, 8; Evans 1881, fig. 156). The chronology of the southern French axes is mainly Bronze Final III (Guilaine 1972, 175-277, fig. 103). Schauer has dated the hoard from Ribiers, Hautes Alpes, to Ha B1 (1975a, 56) but the indented axe in this hoard (Chantre 1875, pl. XXV, 1) bears little resemblance to British indented axes. The Larnaud hoard, Jura, with indented axes (*ibid.*, pls. XL, 1; XL bis, 1; Millotte 1963, pl. XL, 2) and an indented adze (Chantre 1875, pl. XL bis, 3) contains Bronze Final III types (Schauer 1975a, 56). Indented axes occur in the Bronze Final II Saint-Denis-de-Pile group in Aquitaine, but these have round mouths like the axes from southern France (Coffyn 1976, 538).

Britain and France shared indented socketed axes during LBA2 and neither area can easily be given chronological priority. British and French forms are distinct, though the example from Amiens (List 99, 5) is probably of British origin. There is a single indented axe from the southern Netherlands (List 99, 7), whether of British or French origin is uncertain.

The area of north-western East Anglia which has produced so many early socketed axes has also produced typologically early faceted axes with square mouths, deep collars and octagonal bodies, e.g. Littleport, Cambs. (CMAE 38.386; Fig. 51, 6), and Lakenheath, Suffolk (Moyses Hall Museum, Bury St Edmunds; fig. 51, 7). These may be placed in the same LBA2 phase as the other square-mouthed axes discussed above. For octagonal faceted axes there exists a pair of examples which reflects the Wangford and Kütten-Drobitz

finds of earlier axes. This is the pair illustrated by Sprockhoff (1941, 89, Abb. 73) from the Thames at Wandsworth and Ratibor, Silesia (Racibórz, Prov. Opole, Poland). It is possible that the Silesian axe represents a prototype for British faceted axes (Butler 1963a, 89); these axes cannot be dated precisely (*ibid.*, 87).

A few miscellaneous axes of exotic origin (List 100) may be placed within LBA2. The first is the Nordic axe from Carse Loch (List 100, 1). This is a MIV type found mainly on Zealand and in southern Sweden, also in the remainder of Denmark, Schleswig-Holstein, northern and central Germany and southern Norway (Baudou 1960, 17-18, 168-170, Taf. IV, VIIA 1a, Karte 8). Butler (1963a, 91) cites the axe from Højby, København Amt (Baudou 1960, 169, no. 38), as a parallel for the Carse Loch axe and suggests a possible relationship between these axes and South Welsh socketed axes. More recent work on the origin of South Welsh axes may preclude this derivation (Burgess 1976a, 69-72); for British socketed axes with grooved ornament, see Savory (1975, 114-115).

The other exotic axes are of eastern European origin; a few such axes are known from the Nordic area during MIV (Thrane 1975, 111) when influence from east-central Europe was stronger than during MV (*ibid.*, 229-230) and this may be reflected in the western finds discussed here. If these axes were ancient imports, the date of their deposition is uncertain; all are treated here for convenience, though some could equally be placed in LBA1, as could the Carse Loch axe. Both of the London axes appear to be of Ha A1 date. The first (List 100, 2) cannot be matched precisely but Holste's sketches illustrate many similar axes in hoards from Croatia: Bizovac (1951, Taf. 3, 1-4), Pockavlje i Brod (*ibid.*, Taf. 7, 1-2), Bingula-Divos (*ibid.*, Taf. 11, 1-5) and Tenja (*ibid.*, Taf. 13, 1-2), and in the Czabapuszta hoard, south-western Hungary (*ibid.*, Taf. 36, 8-9). Von Brunn places all these hoards in the Ha A1 Kisapáti phase (1968, 290-291; Schauer 1974c, 117-118). The second Thames axe (List 100, 3) appears to be a small example of a Transylvanian form also found in northern Hungary, but rare further west; this form is of Ha A1 date (Novotná 1970a, 97-98; Rusu 1966, 25-26, 38-39, fig. 2, 85). The first axe from Paris and the Dutch axe (List 100, 4, 7) both have the concave mouth of the East Carpathian 'spout' type which appeared in Transylvania during the Reinecke D Uriu phase and spread westwards during the Kisapáti and Rohod phases, Ha A and Ha B1 (Novotná 1970a, 73-79). Briard and Verron's description of the Paris axe as 'Bohemian' (1976b, 34) is misleading, for its origin was probably more easterly. The second Paris axe (List 100, 5) belongs to a form found from Transylvania to eastern Austria and Croatia; it appeared at the beginning of the Urnfield period but the offset blade of the Paris axe is a typologically late feature of the Rohod phase, Ha B1 (Novotná 1970a, 83-87). The Belgian axe (List 100, 6) belongs to the same form and can be matched by an axe in the Ha B1 hoard from Nitra, Slovakia (Novotná 1970a, 51, 84 no. 607).

Socketed adzes. LIST 101.

Socketed adzes appeared in France during Bronze Final II in the Saint-Denis-de-Pile group of Aquitaine; they commonly had indented or shouldered profiles (Briard and Verron 1976b, 85-86). There is a shouldered adze in the

Pontpoint hoard (List 101, 5) which may be LBA2. The indented adze from Oxwick and Pattlesley (List 101, 2) should be LBA2 and the square mouths and plain collars of the British shouldered adzes suggest a typologically early date which could be within LBA2, if not earlier.

Socketed hammers.

The only LBA2 association of socketed hammers in Britain is in the Isleham hoard (127) where a short, broad form (Fig. 44, 23) and a longer, more slender form (Fig. 44, 24) are represented. The short form occurs in Brittany during Bronze Final II in the hoards from Saint-Brieuc-des-Iffs, Ille-et-Vilaine, and Morandais en Noyal, Cotes-du-Nord (Briard 1965, 180; Briard and Onnée 1972, 12, pl. XII, 89; Nicolardot and Gaucher 1975, 10). Hammers are also known in the contemporary Saint-Denis-de-Pile group of Aquitaine (Coffyn 1976, 538). The slender form at Isleham recalls the socketed hammer in the MBA2 hoard from Taunton Union Workhouse (List 15, 2).

Socketed gouges.

Socketed gouges appear in three British hoards of LBA2: Isleham (127), Guilsfield (131) and Blackmoor, Hants (Davies 1967, 104; Burgess 1968a, 37). There are socketed gouges in French Bronze Final II hoards from Saint-Brieuc-des-Iffs (Briard 1965, 183; Briard and Onnée 1972, 10-11 pl. XI, 74-78) and Boutigny II (133) and in the contemporary Saint-Denis-de-Pile group (Coffyn 1976, 538).

The Isleham and Guilsfield gouges have multiple mouth mouldings while the Saint-Brieuc-des-Iffs gouges have plain collars. These tools exhibit little typological change and it seems difficult to give chronological weight to any typological division (Burley 1955-56, 148; Eogan 1964, 296). The origin of the socketed gouge has been traced by Eogan (1966b); it appeared in Transylvania, probably first in the hoard from Augustin (Roska 1942, 29, fig. 23, 4; von Brunn 1968, 289; Mozsolics 1973, 41, 116), contemporary with Reinecke D (Rusu 1963, 205 no. 3), and later in the huge hoard from Uioara de Sus (Roska 1942, 91, fig. 115, 2; von Brunn 1968, 291), contemporary with Ha A1 (Rusu 1963, 208 no. 66). The type had reached Brittany by Bronze Final II and was common to northern France and southern Britain during LBA2.

Chisel blades.

The Isleham hoard (127) contains the tip of a chisel blade with parallel sides (Fig. 44, 28). Several comparable tools are known from France, the ciseaux simples of Nicolardot and Gaucher (1975, 118-119). An example from Gourdan, Haute-Garonne (*ibid.*, fig. 4), has an antler haft. These chisels are included in Bronze Final II hoards from Caix (140) and Kerguerou en Rédené, Finistère (*ibid.*, fig. 5; Briard 1965, 183, fig. 61, 8).

Leather-working knives.

A recent reassessment of the tools known to British archaeologists as 'tanged chisels' has suggested another interpretation. Roth has compared these tools to representations on fifth century B.C. Greek vases and concluded that the tools were 'Ledermesser' (1974, 40, Taf. 6). The trapezoidal blades, often with recurved edges, may have been practical for wood-working, but would not have fulfilled some of the functions demanded of a chisel, especially mortising.

The most recent discussion of British leather-working knives is by Burgess, Coombs and Davies (1972, 217-218). The first examples with the blade distinct from the tang—Roth's Ledermesser—appeared in LBA2 hoards from Wilburton (129) and Doncaster, Yorks. (Burgess 1968b, fig. 7, 2). Leather-working knives occur in contemporary hoards from northern France (Nicolardot and Gaucher 197 111) at Champcueil (134) and Saint-Brieuc-des-Iffs, Ille-et-Vilaine (Briard and Onnée 1972, 11, pl. XII, 87). The French examples belong respectively to Roth's Type I and Type III (1974, 47), while the Wilburton piece should belong to his Type II (*ibid.*, 38), so all forms of tanged leather-working knives appear to have been represented during LBA2. The type was common during LBA3 (see p. 175).

As well as British, Irish and French finds, there is an example from Franconia (Roth 1974, 37, Abb. 1), another from the lower Elbe (Tackenberg 1975) and another in the Museo Arqueológico Nacional, Madrid (Menéndez Pidal 1947, fig. 618).

Double-T-hilted knives. LIST 102.

In northern Europe there is a small group of solid-hilted single-edged knives which have a characteristic form of hilt; the grip is flanked by two transverse projections and separated from the blade by a Zwischenstück. The Dutch have used the term offermeres to describe these knives, but I have adopted Sprockhoff's more objective denomination, Messer mit doppelt T-förmigem Griff (1937, 27).

These knives have recently been discussed by Tackenberg (1971, 123-126, 233, Liste 60, Taf. 29-30), Thrane (1972b, 186-189) and by Butler (1973a), who published a new find (List 102, 3). There are four examples from the eastern Netherlands, three from north-western Germany and an outlier from northern Zealand (Butler 1973a, fig. 3). They have conventionally been dated to MIV, but Tackenberg has lowered this date; apart from his predilection for this change, he considers that the appearance of the Zwischenstück merits a MV date, that the Appelscha knife (List 102, 2) bears MV ornament on its blade, that the tweezers found with the Danish knife at Vejby could be MV as well as MIV (1971, Liste 60, 7) and that this Danish find was an inhumation, thus no earlier than MVI. Butler agrees that the double-T-hilted knives were of Urnfield Ha B1 inspiration and concludes that they appeared around 800 (1973a, 23-24), i.e. around the MIV/MV transition. Thrane also claims a MIV/Ha B1 origin (1972b, 189). The German knife from Barrien-Bulten, Kr. Grafschaft Hoya, Lower Saxony (Tackenberg 1971, Liste 60, 5), was associated with a British late palstave, but this could be LBA3 or LBA2.

Whatever the exact date of knives with double-T-hilts, they demonstrate a common distribution over north-western Germany and the eastern Netherlands.

WEAPONS

Spearheads. LISTS 103-106. MAP 40.

A rich variety of spearhead forms was present in British LBA2 hoards, especially in the hoards from Wilburton (129) and Isleham (127). The most thorough recent analysis is by Coombs (1975a, 58-61), cf. also Ehrenberg

(1977, 14), Burgess, Coombs and Davies (1972, 213-215) and Burgess (1968a, 36). Pegged spearheads with solid leaf-shaped blades became common and new forms appeared; spearheads with hollow blades, stepped blades, perforated blades, fillet-defined midribs and various combinations of these features. Ornament occurs chiefly on the socket, bands of lines with triangular or semi-circular motifs (Coombs 1975a, 60, fig. 8).

Spearheads in Bronze Final II hoards from Brittany are often fragmentary and undiagnostic, plain pegged spearheads are the rule (Briard 1965, 180) and the more elaborate British forms are absent. Spearheads are common in Bronze Final II hoards from north-eastern France (List 103, 1-2, 6, 8, 12-13) but the plain type is also dominant in this region. Only the Combon hoard contains a decorated spearhead (List 104, 3) alongside plain spearheads (List 103, 4) which may be of Bronze Final II origin. Isolated finds of plain spearheads with short sockets are often attributed to Bronze Final II by French writers (List 103, 3, 5, 7, 9-11). The group of spearheads from Pulle (List 103, 14) could be contemporary and a few isolated finds from the Low Countries may be LBA2 (List 103, 15-18), but this is uncertain.

Three spearheads with perforated blades found in north-eastern France should be of British LBA2 origin. The example from Nampont (List 106, 2) has lunate openings, a characteristic Wilburton form, possibly later in high-land Britain and Ireland (Coombs 1975a, 58). There are three other spearheads with simple lunate openings from France (Briard 1963, 576 nos. 6, 23, 24). A spearhead from Denhead, Angus, combines lunate openings with circular perforations (Evans 1881, 336-337, fig. 421; Coles 1959-60, 76, Angus 4) as does a single spearhead in the Huelva hoard, south-western Spain (Inv. Arch. E1, 140). The two spearheads from Paris (List 106, 1) combine circular perforations with slots and have angular sockets. These features recur on a spearhead from the Morel Collection in the British Museum, probably from Champagne or the lower Rhone valley (Smith 1920, 129, fig. 136) and on a spearhead from the Thames at Bray, Berks. (Ehrenberg 1977, 32 no. 20, fig. 23). There is another example with slots and circles from Bray (*ibid.*, 31, no. 17, fig. 23) and another from the bank of the Tyne near Ovington, Nthld. (Burgess 1968b, 31, fig. 22, 8). Schüle lists other finds of lunate-opening spearheads, mostly from eastern Europe (1969, 85-86, 178-180, Karte 4). Butler (1963a, 107, fig. 31, 2) claimed that the ornament on a spearhead from Skurup, Scania, imitated lunate openings, but Jacob-Friesen (1967, 233) has shown that the resemblance is only superficial.

Spearheads with fillet-defined midribs appear to be almost absent from France and the Low Countries, though Jacob-Friesen has identified one example, presumably a British export, from Schleswig-Holstein (1967, 254, 335 no. 820, Taf. 156, 5). This form was not so exclusively insular as Burgess, Coombs and Davies have suggested (1972, 213). Spearheads with fillets on blade and socket were common in Hungary during Moszolics' Bronze IV, equivalent to the late Tumulus and early Urnfield periods (1973, 33-34) and they are found later in the Zsujta hoard, dated to Ha A2 (Müller-Karpe 1961, Taf. 28A, 9-12; Jacob-Friesen 1967, 198, 200, 233, 372 no. 1570, Taf. 107, 2; von Brunn 1968, 292). Spearheads with fillets were widespread in east-central and eastern Europe during Ha A and early Ha B (Jacob-Friesen 1967, 200; Garasanin

1956). These eastern forms reached Saxony in the Ha B1 hoard 2 from Dresden-Laubegast (von Brunn 1968, 140, 315-316 no. 50, Taf. 44, 4) and the Nordic area (Jacob-Friesen 1967, 276). The spearhead from Chézy-sur-Marne (List 104, 2) combines fillets with geometric ornament which could be of early Ha B/LBA2 date (see below). Jacob-Friesen also points to fillets on spearheads with late Urnfield ribbed sockets (1967, 276, Taf. 183, 1, 5) but these late Urnfield forms should not have been sufficiently early to influence the appearance of British spearheads with fillet-defined midribs as he appears to suggest (*ibid.*, 276 n. 11).

In the Nordic area hollow-bladed spearheads 'zu den Leitformen der Periode IV gehören' (Jacob-Friesen 1967, 225) which has encouraged Butler (1963a, 107) and Coombs (1975a, 60) to suggest that British hollow-bladed spearheads of LBA2 were derived from the Nordic form. The relationship does not appear to be close and Jacob-Friesen rejects this Nordic derivation (1967, 232-233). I know of no hollow-bladed spearhead with a leaf-shaped blade from France or the Low Countries, though there is a fragmentary example in the hoard from the Río Sil, Orense, north-western Spain (Inv. Arch. E3, 3), alongside a basal-looped spearhead (see p. 64).

Continental spearheads decorated with semicircular and meander motifs are considered to be derived from west-Alpine spearheads of Ha B1 and Ha B2 date (Jacob-Friesen 1967, 262-263; Müller-Karpe 1959, 167, Abb. 41, 6-7) though these motifs also occur during Ha B3 (Müller-Karpe 1961, 50 n. 3). A large group of decorated spearheads, some with semicircular motifs, was dredged from the Marne at Brasles (List 104, 1) with swords of early Ha B date (see p. 143). The cordiform motif on the Eure spearhead (List 104, 4) can be found in the western Urnfield area and in the Nordic area (Jacob-Friesen 1967, 268) though its precise date is uncertain. The triangular motifs on the Combon and Seine spearheads (List 104, 3, 6) can be matched on spearheads in British LBA2 hoards (Coombs 1975a, 60, fig. 8, 9). Semicircular motifs are known in Britain only in the Blackmoor hoard, Hants (*ibid.*, fig. 8, 1-3), and these may reflect continental influence.

There are two similar decorated spearheads in Antwerp Museum (List 104, 8-9) and these may be compared to a spearhead from Toddin, Kr. Hagenow, Mecklenburg (Jacob-Friesen 1967, 235-236, 362 no. 1365, Taf. 123, 6). Such spearheads, with faceted sockets and triangular ornamental motifs are unusual and Jacob-Friesen suggests an Italian origin. Hatched triangles occur on the blades of a few spearheads in the British Broadward complex (Burgess, Coombs and Davies 1972, 215).

The chronology of the decorated spearheads from the Netherlands is problematical. The example from Boerakker (List 104, 10) is included by Jacob-Friesen among a group of north European spearheads with ribbed mouths in local style but incised ornament derived from the western Urnfield area; this group is given a date of Ha A/B, MIII/IV (1967, 265-267). Tackenberg points out that the triangular motif on the Boerakker spearhead is less common than the semicircular motif and he suggests a later date of MV/MVI (1971, 81-82). The spearhead from Ageler Broek (List 22, 12), dated to the Middle Bronze Age by Butler (Inv. Arch. NL13), is compared to early Ha B examples by Jacob-Friesen (1967, 264). Several spearheads with facets on the upper

part of the socket, related to so-called 'Saxo-Thuringian' spearheads, occur in the Netherlands (List 105). The examples from Nijmegen and Stokkum (List 105, 4-5) are otherwise plain, that from Huinen (List 105, 3) has incised ornament on the socket (Jacob-Friesen 1967, 237). The examples from Erica and Weerdinger Veen (List 105, 1-2) have ribbed sockets (Jacob-Friesen 1967, 249). These spearheads belong to a heterogeneous group (Jacob-Friesen 1967, 235-249; Sprockhoff 1937, 25-27). Faceted sockets had already appeared on MIII Hulterstad spearheads (Jacob-Friesen 1967, 237, Taf. 91, 10-12) and a MIV date is possible for Nijmegen, Stokkum and Huinen examples (*ibid.*, 237-245). The date of the ribbed examples could be as late as MV (*ibid.*, 245-248; von Brunn 1968, 142-143). Tackenberg has shown that so-called 'Saxo-Thuringian' spearheads are not concentrated in Saxony or Thuringia (1971, 67-68, Karte 16) though the origin of the Erica and Weerdinger Veen spearheads should still be central or north German. He suggests a MV date for Variant 2, including the Erica spearhead (*ibid.*, 67, 69, Liste 41b) and a MIV date for the appearance of Variant 4, including the Weerdinger Veen spearhead (*ibid.*, 67-69, Liste 41d).

Tubular ferrules. LIST 107. MAP 41.

Tubes with slightly tapering profiles, sometimes a little concave, and plain or slightly expanded terminals are usually interpreted as the ferrules of spear-shafts. The terminal is often solid for a short distance, presumably to provide a counterweight to the head (Savory 1964-66, fig. 4, 6-9, 13). These ferrules are not often found complete, but they can measure as much as 43.75 cm in length (*ibid.*, 194 no. 5, fig. 4, 7).

Long tubular ferrules with plain or slightly expanded terminals appeared in Britain during the Wilburton phase and in northern France during Bronze Final II (Burgess 1968a, 36, fig. 9; Coombs 1975a, 61; Briard 1965, 180, 193, figs. 59, 1-7; 65, 66, 5). British examples were confined largely to southern and eastern England during LBA2; during LBA3 they recurred in the same region in Broadward hoards and were also known in other parts of Britain (Burgess, Coombs and Davies 1972, 216, 233, fig. 3); Irish finds are rare (Eogan 1964, 290, fig. 1, 8).

Tubular ferrules do not appear to be common in France outside the north; the three examples from the Scheldt (List 107, 8) are presumably of western origin, like the Dutch find (List 107, 9) if it did not originally have a disc terminal. The terminals of the tubular ferrules in the Huelva hoard, south-western Spain (Inv. Arch. E1, 149-187) all appear to be more or less expanded and not related to the LBA2 form. A number of tubular ferrules is known in the Nordic area (Sprockhoff 1956, 84; Butler 1963a, 133) but only one appears to be a western type and this is in a MV hoard from Kronshagen, Kr. Rendsburg, Holstein (Sprockhoff 1941, 96-97, Abb. 78; 1956, 40, Taf. 3, 10; Baudou 1960, 322; Butler 1963a, 133).

Tubular ferrules constitute one of the most distinctive types common to southern Britain and northern France during LBA2; while they are found throughout northern France, they are rare in south-western Britain and isolated finds are concentrated in the lower Thames valley.

Locras swords. LIST 108. MAP 42.

Locras swords have a broad leaf-shaped blade of lozenge section with a long ornamented ricasso; straight shoulders contain two or four rivet-holes, the swollen grip has two or three rivet-holes, the flanges can be notched on the swelling and the sides of the hilt can be ornamented; the fish-tail pommel can have a central projection (Schauer 1971, 176).

The distribution of Locras swords is centred in western Switzerland, extending to north-eastern France, Limburg, central Germany and Bohemia (*ibid.*, 179, Taf. 122A).

A variant in the Ha A2 burial from Gammertingen, Kr. Sigmaringen Baden-Württemberg, gives a date for the appearance of Locras swords, most of which should belong in the succeeding phase (*ibid.*, 179). The Maastricht sword (List 108, 2) is also a variant and might belong to the end of LBA1 rather than to LBA2.

Mainz swords. LIST 109. MAP 42.

Mainz swords have a broad leaf-shaped blade with an oval section or a midrib, usually with multiple outlines; there is a long ricasso; shoulders are straight or slightly concave with four rivet-holes; the swollen grip has two or three rivet-holes and there is a fish-tail pommel (Schauer 1971, 171). The sword from Precy-sur-Oise (List 109, 1) is related to the Mainz type and to the more elaborate Forel type (Schauer 1971, 180-181). Both Mainz and Forel swords belong to Ha B1 (*ibid.*, 172, 181). Schauer recognises no Mainz sword outside southern and western Germany (*ibid.*, 172-173, Taf. 121B) while Forel swords are more common further west (*ibid.*, 181, Taf. 122A).

Schauer does not mention the sword from the Seine at La Rochette, Seine-et-Marne (Cabrol and Pauron 1937, 488, fig. 10; Gaucher and Mohen 1972, 533, fig. 1b), which Cowen listed as a Mainz sword (1955, 145 no. 5). This sword has an ornamented ricasso; its length, 68.8 cm, suggests that it is related to the Locras type rather than to the longer Otterstadt group (Schauer 1971, 179-180).

There appears to be a small group of decorated flange-hilted swords of early Ha B date from eastern France separate from the Middle Rhine group. A decorated blade fragment in Boutigny hoard II (133) could belong to this group.

Klentnice swords. LIST 110. MAP 42.

Klentnice swords are flange-hilted swords with separate antennae pommels; they are related to solid-hilted antennae-pommel swords of Lipovka type (Müller-Karpe 1961, 53-54), Ha B2. The eponymous Klentnice sword comes from a Moravian cremation burial (Novák 1975, 26 no. 122; Rihovský 1972, Taf. 43A) of the earlier Podolí phase of the middle Danube Urnfield culture, Ha B1 and part of Ha B2 according to Rihovský (1966, 534), Ha B1 according to Podborský (1970, 191, Taf. 25, Abb. 1). Both Schauer (1971, 175-176) and Thrane (1968, 175) date Klentnice swords to Ha B1.

The distribution of Klentnice swords is widespread, the Brasles pommels (List 110, 1) being the only finds west of the Rhine; Schauer suggests the region between the eastern Alps and the Carpathians for the origin of Klentnice swords (1971, 176, Taf. 121B).

Atlantic leaf-shaped swords. LIST 111. MAP 43.

The flange-hilted swords with leaf-shaped blades, common in north-western France and usually known as 'Atlantic' swords, have been discussed by Briard (1965, 177, 187-192) and his classification has been summarised by Gaucher and Mohen (1972, 55).

Atlantic leaf-shaped swords found in hoards are often fragmentary and the detailed typology is based on isolated examples, especially from Nantes, Loire-Atlantique. Blades have a lozenge section with a distinct midrib, undecorated or with outlines. Shoulders are straight or slightly convex; four rivet-holes are usual, exceptions rare. Grips have straight or slightly convex sides with three rivet-holes or a slot. Pommels have a fish-tail form, more or less well defined.

Briard defined three forms (1965, 187-192, figs. 63-64). Form a has a shallow ricasso or, rarely, no ricasso at all. Form b has a deep ricasso and the upper parts of multiple outlines can be marked by pointillé ornament. Form c is the Saint-Nazaire type of Cowen (1956; Gaucher and Mohen 1972, 55, fig. 2); Cowen had defined this with especial reference to the appearance of pointillé ornament by the deep ricasso, but Briard prefers the narrower blade with more nearly parallel sides as the principal typological indicator.

Atlantic leaf-shaped swords are dated to Bronze Final II throughout northern and western France (*ibid.*, 55; Briard 1965, 192-195; Coffyn 1976, 538; Verron 1976a, 592; Gaucher and Mohen 1974, 54). Atlantic leaf-shaped swords were derived from central European leaf-shaped flange-hilted swords (Briard 1965, 185) and the first examples may have appeared at a time contemporary with later Ha A (see p. 115) and Burgess (1968a, 13) has claimed that the typologically early form with convex shoulders was more common in France than in Britain. There is no corpus upon which to found a detailed typology; it may be assumed that the first Atlantic leaf-shaped swords were produced in northern France during later LBA1 but I know of no hoard association earlier than LBA2. It should be noted that the conventional dating of Hemigkofen swords to Bronze Final II (Briard 1965, 185; Gaucher and Mohen 1972, 523), while satisfactory for the correlation of the early part of Bronze Final II with Ha A in eastern France (see p. 31-32), is less so in northern France, where hoards containing material predominantly of Bronze Final I were deposited contemporary with Ha A2, e.g. Cannes-Ecluse I and Longueville (see p. 99-100). Hemigkofen swords should have occurred in northern France during later Bronze Final I, since only their local Atlantic imitations were incorporated into hoards of Bronze Final II.

Atlantic leaf-shaped swords are confined mainly to the north and west of France (Briard 1965, 192-193) with large concentrations on the lower Loire (*ibid.*, 192, fig. 65) and in the Seine valley (Map 43); they are common in the valleys of the Oise and the Somme, but rare beyond.

There are a few finds from central Europe but only one gives useful independent dating evidence. This is the hilt in the hoard from Maskovice, Bohemia (Novák 1975, 27 no. 126); this hoard also contains a Rosnoën palstave (Richlý 1893, Tab. XIX, 3). Von Brunn has dated the Maskovice hoard to Ha B1 (1968, 255 n. 2, 304, Tabelle 2). There are also a hilt fragment and two blade fragments in a hoard supposedly from Kolbensteinberg, Ldkr. Gunzenhausen, Bavaria (Cowen 1955, 152-153; Schauer 1971, 188 no. 566; Müller-Karpe 1958, 18-19, Abb. 8). The contents of this hoard can almost all be matched in French Bronze Final II hoards: indented socketed axe, winged axe fragment, lozenge-section chape, spiral and convex phalera. The stepped phalera can be matched in Britain (see p. 149). Müller-Karpe suggested that the hoard was found in France and brought to Germany (*ibid.*, 19) and it is now clear that this happened to the Juvincourt hoard (163). There is a fragment of an Atlantic leaf-shaped sword in a burial from Säckingen-Flühwaldchen, Ldkr. Säckingen, Baden-Württemberg (Schauer 1971, 188 no. 571; Gersbach 1968-69, 47 no. 33, 188 no. 29, Taf. 76, 4), but this find is not closely datable. There are isolated finds from the Rhineland and Switzerland (Schauer 1971, 187-188 nos. 557, 558, 560, 561, 564, 568, 570). The sword from Badegow, Kr. Schwerin, Mecklenburg (Cowen 1952, 144 no. 2, pl. XV, 1), is probably a British sword of Burgess' Group III (1968a, 35, fig. 1, 5).

Atlantic leaf-shaped swords occur in south-western France in the Saint-Denis-de-Pile group on the Gironde (Briard 1965, 193-195; Coffyn 1976, 538, fig. 3, 14, 17) and similar swords occur in the Iberian peninsula (Briard 1965, 196-197; Savory 1964-66, 184, fig. 8; 1968, 225). A series of Iberian leaf-shaped flange-hilted swords has been illustrated by Almagro (1940, fig. 17, lám. VI). Most of these have three slots like Iberian Carp's Tongue swords (*ibid.*, fig. 19, lám. I). The three-slot type is rare in northern France (see p. 143) and the Iberian examples are probably local, cf. the examples with broad shoulders from Evora, Portugal (Schubart 1975, 87, 268 nos. 467-468, Taf. 53). There is a three-slot sword in the Rio Sil hoard, Orense, north-western Spain, with a basal-looped spearhead and a hollow-bladed spearhead (Inv. Arch. E3). Even in south-western France, three-slot swords are not common (Coffyn 1967, 793, figs. 1, 2; 2, 3), and the Iberian three-slot swords are probably not of French origin.

Some Iberian swords may be of French or British origin. The example from Alhama de Aragón, Zaragoza, northern Spain (Almagro 1940, fig. 17, 4, lám. VI, 4), has multiple outlines, convex shoulders with four rivet-holes and a slotted grip; it was found with a lozenge-section chape. This find should have been derived from the north, but not necessarily any further north than the Gironde. A sword from Vilar Maior, Sabugal, Guarda, Portugal, has convex shoulders with six rivet-holes and a slotted grip (de Castro Nunes and Vasco Rodrigues 1957, 279-284, fig. 1A). It is rare for French Atlantic swords to have six rivet-holes (see p. 143) and the Vilar Maior sword may be compared to British swords of Burgess' Group III (1968a, 35, fig. 1, 5). A sword from Saint-Brice, Charente, has six rivet-holes in its shoulders, but also has rivet-holes in its grip (Coffyn and Gomez 1971, 248-251, fig. 3). The drooping shoulders of the three-slot sword from Sobrefox, Ponga, Asturias (Almagro 1940, fig. 17, 2, lám. VI, 2), may be compared to the shoulders of the three-slot sword from the Garonne near La Réole, Gironde (Coffyn 1967, 785-786, figs. 1, 2; 2, 3).

It appears that only these two or three leaf-shaped flange-hilted swords need have been imported into Iberia from the north and only the Vilar Maior sword need have come further than from Aquitaine. Savory (1964-66, 184) and Hawkes (1969, 188-190) appear to have exaggerated the specific contribution of northern France and Britain.

Wilburton swords. MAP 43.

It was Cowen (1933, 197-198) who first suggested that the sword fragments in the Wilburton hoard were characteristic of a large group of swords. Three LBA2 hoards from Britain contain a large number of sword fragments: Wilburton (129), Isleham (127) and Blackmoor, Hants (Coombs 1975a, fig. 5). None of these hoards has yet been fully published.

The swords in the Wilburton hoard have slotted grips, straight or slightly convex shoulders with two or four rivet-holes and blades with broad midribs, bevelled edges and ricassi. Some examples have enlarged rivet-holes. Decoration appears to be absent. There is more variety in the large hoard from Isleham. Slotted grips are usual, though some examples have rivet-holes. Shoulders are straight or slightly convex with two, four or six rivet-holes, or two slots. Blades can have oval sections or midribs; bevelled edges and ricassi are usual. Multiple outlines, sometimes with pointillé are present on some blades. There is a similar variety of details in the Blackmoor hoard (Haverfield 1900, 338, fig. 31).

Isolated finds show a similar combination of features. Thames at Sion Reach, Middlesex (Burgess 1968a, fig. 9, 2), slotted grip, straight shoulders with four rivet-holes, lozenge-section blade with bevelled edges and ricasso; Aldreth, Haddenham, Cambs. (Fox 1923, 59, pl. IX, 1; CMAE 93.160; Fig. 54, 1), slotted grip, straight shoulders with four rivet-holes, broad midrib and ricasso on blade; Thames at Teddington, Surrey (Museum of London, ex Guildhall Museum 11.022; Fig. 54, 2), slightly convex shoulders with four rivet-holes, narrow midrib and ricasso on blade; Mortlake, Surrey (Brewis 1922-23, pl. XLVI, 43), three rivet-holes in grip, convex shoulders with four rivet-holes, midrib and ricasso on blade; Wetheringsett, Suffolk (Norwich 1966, 22, fig. 44), slotted grip, slightly convex shoulders with two rivet-holes, broad midrib on blade, this sword may have been found with bones (Burgess 1976b, 89 no. 21); Thames at Battersea, Surrey (Burgess 1968a, fig. 9, 3), three-slot sword with straight shoulders. Three-slot swords do not appear to be common.

Coombs (1975a, 62) appears to include all swords with pointillé ornament in the Saint-Nazaire type but this feature is not diagnostic and does not appear on the eponymous sword (see p. 143). The form of the blade of the longest sword in the Isleham hoard (Fig. 42, 3), with its broadest point set low down, conforms to the French definition of Saint-Nazaire swords, and its hafting arrangement, slotted grip and four rivet-holes in the shoulders, would not be out of place on a French sword. A sword from the Thames with pointillé ornament (Brewis 1922-23, pl. XLVII, 47) has six rivet-holes in its shoulders, whereas French swords usually have four (see p. 143). The hafting arrangement of the hilt with pointillé ornament in the Wicken Fen hoard (128) does conform to the French pattern but the ridged hilt-mark may be a local feature.

The typological position of Wilburton swords is clear; they come after insular versions of early Urnfield flange-hilted swords, Burgess' Group III, and before Ewart Park swords, Burgess' Group V. Wilburton swords constitute Burgess' Group IV. They should not have appeared before a time contemporary with later Ha A2 and were not deposited in hoards before LBA2. A few Wilburton swords, e.g. Thames at Staines, Middlesex (Museum of London A.10948), have a distinctive swollen grip which can be matched on Ha B1 swords of Locras, Mainz and Forel types.

The distribution of Wilburton swords in Britain is more extensive than that of any earlier sword type, though most examples come from southern and eastern England. There are particular concentrations in the south-eastern margins of the Fens, where hoard finds predominate, and in the lower Thames valley, where single finds predominate.

LBA2 swords: discussion

British Wilburton swords and French Atlantic leaf-shaped swords belong to the same tradition, derived from early Urnfield models, and are characteristic of LBA2 on either side of the Channel. However, the two groups are not identical. Most French swords have four rivet-holes in the shoulders, whereas British swords may have two, four or six. The proportions of French swords with slots and with rivet-holes in their grips appear to be roughly equal, whereas slotted grips appear to be more common in Britain. Three-slot swords are not common on either side of the Channel.

Only the publication of complete corpora will allow more detailed distinctions to be made but some conclusions may be based on overall distribution (Briard 1965, fig. 65; Map 43). Atlantic leaf-shaped swords appear to be at least as common in the north-east of France as in the north-west, while most Wilburton swords are found in south-eastern Britain and they are conspicuously absent from the south-west. Atlantic swords are also rare beyond the Somme valley. LBA2 swords demonstrate very well a distribution common to south-eastern England and north-eastern France, with especial emphasis on the valleys of the Thames, Seine, Somme and Oise. Central European swords are almost absent from these areas, reaching only as far as the Marne and the Oise (Map 42).

Lozenge-section chapes. LIST 112. MAP 44.

Lozenge-section chapes are characteristic of LBA2 on both sides of the Channel (Briard 1965, 177-180; Burgess 1968a, 36). Classifications of lozenge-section chapes by Egan (1965, 168-171) and Burgess, Coombs and Davies (1972, 218-219) are based on length. Small lozenge-section chapes occur after LBA2. The only complete chape in the Isleham hoard is 13.0 cm long (Fig. 43, 4) and the shortest chape in the Guilsfield hoard is 13.25 cm long (Savory 1964-66, 195 no. 16). The fragmentary chapes in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, pls. IX-X) seem originally to have been no shorter than those in the British hoards. The only complete chape in the Wilburton hoard measures 33.12 cm in length (Fig. 47, 6) and the largest in the Guilsfield hoard 37.5 cm (Savory 1964-66, 195 no. 5). All the continental chapes listed here (List 112) appear to fall within this range, that is types a and b of Burgess, Coombs and Davies (1972, 219). Angles are

often defined by ribs and the tip may be moulded, but other ornament is rare. The Gentbrugge chape (List 112, 15) has zigzag ornament below the mouth and one chape in the Guilsfield hoard is decorated (Savory 1964-66, fig. 6, 2).

In France lozenge-section chapes occur mainly in the north and west (Briard 1965, 176-180, 193-195, figs. 58, 65; Coffyn 1976, 538, fig. 3, 22; Map 44). Most French chapes appear to have straight mouths; the deeply concave form known in Britain, cf. the chapes in the Guilsfield hoard (131) (Coombs 1975a, fig. 9, 15), does not appear to be common in France. Lozenge-section chapes are rare elsewhere in France; there is a fragment with transverse cordons in the Larnaud hoard, Jura (Chantre 1875, pl. XLVI, 2). There is one Spanish find associated with a sword at Alhama de Aragón (see p. 144). The distribution of LBA2 lozenge-section chapes is similar to that of contemporary swords in Britain and on the continent (Maps 43-44).

The longest lozenge-section chapes would have projected about 15.0 cm beyond the end of the scabbard. These were presumably designed as prestige or display items. The additional length might have inconvenienced a foot-soldier and may have been more practicable for a mounted warrior.

VESSELS

Cauldrons

The bronze cauldrons of the British Bronze Age have been the subject of two classic studies. In 1930 Leeds published an example from the R. Cherwell at Shipton-on-Cherwell, Oxon., established a typology for cauldrons and suggested a Mediterranean origin (Leeds 1930). In 1957 Hawkes and Smith (160-190) addressed themselves to the problems of the origin and chronology of these cauldrons, which they named 'Atlantic' (*ibid.*, 160). They concluded that Mediterranean cauldrons were derived from Urartu during the later eighth century (*ibid.*, 175) and suggested that Atlantic cauldrons reached Britain via southern and western France (*ibid.*, 181, 189). They were somewhat cautious about the identification of this route (*ibid.*, 180) and Hawkes has more recently proposed a maritime route around Iberia (1969, 191; 1976a, 66).

The distribution of Atlantic cauldrons is concentrated in Ireland and southern England with three finds from Scotland (Hawkes and Smith 1957, 182). Cauldrons of the earliest typological Class, A1, occur in all these areas and in the Isleham hoard (127). There is a cauldron of Class A3 from Abildholt, Ringkøbing Amt, Jutland, presumably a British or Irish export (*ibid.*, 183; Thrane 1975, 152-153, 233). This is the only Atlantic cauldron found east of the British Isles; there are three from the Atlantic coast of continental Europe. Two occur in Carp's Tongue hoards from Prairie de Mauves, Nantes, Loire-Atlantique, and Hío, Pontevedra, and the third is an isolated example from Cabárceno, Santander. These cauldrons from France and Spain all belong to the later typological Class, B (Hawkes and Smith 1957, 184-185, fig. 10); the staple in the Bronze Final III Déville hoard (173) probably belongs to a Class A cauldron. Apart from Isleham, all the hoards which contain cauldrons are of LBA3 or later date (Burgess 1974, 210); Isleham (127) is LBA2 and, if the flesh-hook from Eriswell were part of the LBA1 hoard (111), the similar hook found with the Class A1 cauldron at Feltwell Fen, Norfolk, could also indicate an early date (Norwich 1977, 29-30, figs. 87, 108; Jockenhövel 1974a, 331-333).

Cauldrons should have appeared in Britain earlier than the eighth-century date proposed by Hawkes and Smith and the typologically early cauldrons appear without any intermediate finds between Britain and the supposed region of origin in the Mediterranean.

In view of these difficulties of chronology and distribution, a north-European origin has been suggested for Atlantic cauldrons (Eogan 1974a, 322 n. 18; Eogan and Herity 1977, 204) and this suggestion may be rendered more plausible if the introduction of sheet bronze shields into Britain from Denmark is accepted (see p. 115-7).

Thrane has published details of the relevant bronze vessels from Denmark (1962a); these occur alongside more familiar types of central European bronze cups. The early MIII vessel from Gyldensgard, Østermarie, Bornholm, diameter c. 25 cm, height at least 15 cm, has a convex body with an everted rim and a cast bronze ring-handle attached to the body by an X-shaped cast loop (*ibid.*, 112-116, figs. 6, 7a). The MIII wheeled cauldron from Skallerup, Praesto Amt, Zealand, diameter c. 37.5 cm, height c. 21.0 cm, has a convex body in two parts joined by flat-headed rivets and a flat everted rim whose edge is rolled round a bronze reinforcing wire (*ibid.*, 154, figs. 25-26; Aner and Kersten 1976, 177-178 no. 1269, Taf. 142-143). These two vessels show all the techniques necessary to produce Atlantic cauldrons.

There are difficulties with this interpretation. One is size; Atlantic cauldrons are twice as big as the Skallerup vessel. Another is chronology; the MIII date of the Danish vessels suggests an origin within LBA1 for the British cauldrons. However, if the appearance of cauldrons is to be related to the appearance of shields, and especially if the Eriswell flesh-hook is accepted as contemporary within the LBA1 hoard and used to date the Feltwell cauldron, a LBA1 date would be plausible. These difficulties appear to be less serious than those involved in accepting the Hawkes and Smith chronology which would not allow the appearance of Atlantic cauldrons before the end of the eighth century (1957, 175); on current chronology this would place the Isleham hoard late in LBA3 and Class B cauldrons, which occur in several LBA3 hoards, could not have appeared before the mid-seventh century (*ibid.*, 176), i.e. during LBA4. Unless a reassessment of the Mediterranean origin for Atlantic cauldrons can provide a higher chronology for the supposed prototypes, I should prefer a northern origin.

Flesh-hook terminals

British and Irish examples of so-called 'flesh-hooks' and their terminals have recently been listed and discussed by Jockenhövel (1974a). The Wilburton and Isleham hoards contain characteristic terminals with knobbed ends and bands of ribbed ornament (List 113, 1-2) and there are comparable French examples from Boutigny hoard II and Villeneuve-Saint-Georges (List 113, 3-4). These examples may be compared to the terminals of more completely preserved flesh-hooks (Jockenhövel 1974a, Abb. 1, 11-14). The hammer-head terminals in the Isleham hoard cannot be matched on complete flesh-hooks but are similar in dimensions to the terminals with knobbed ends. None of these LBA2 hoards contains any hooks.

Flesh-hook terminals appear to be unknown in LBA2 hoards from north-western France, so the two examples from north-eastern France may be regarded as imports from Britain.

HORSE-GEAR

Cheek-pieces

In the hoards from Isleham (127) and Wilburton (129) contain two groups of objects which appear as if they could have been used as cheek-pieces. The first group is constituted by three fragments in the Isleham hoard (Fig. 45, 46-48); these are curved bars with a central loop flanked by slots, they are hollow cast and the single remaining terminal is knobbed. Two of the fragments could be from a matching pair. These objects have facilities for the triple attachment which characterises reconstructions of later prehistoric cheek-pieces (Kossack 1954a, Abb. 1; Marien 1958, fig. 46). The same applies to the second group of objects, hollow C-shaped pieces with open terminals; the best preserved example, in the Wilburton hoard (Fig. 48, 24), has a slot in its apex. There is a similar terminal in the Isleham hoard (Coombs 1975a, fig. 10, 11) and a more elaborate unfinished casting (Fig. 45, 51) may belong to this group.

Both groups of LBA2 cheek-pieces appear to have been symmetrical; in this they differ from the cheek-pieces in early Urnfield and contemporary finds on the continent which were normally asymmetrical (Balkwill 1973, 447, List 1; Thrane 1963). Symmetrical cheek-pieces are known from Ha B at Mörigen, Bern (Kossack 1954a, 131, Abb. 7), and in the Ha B3 hoard from Wallerfangen, Kr. Saarlouis, Saarland (Kolling 1968, Taf. 46, 4). The La Quenique type of cheek-piece of Ha C date is symmetrical (see p. 255). Bronze cheek-pieces appeared in central Europe during Reinecke D (Thrane 1963, 86) and in northern Europe during MIV (*ibid.*, 57, 63, 99) but no particular prototypes for the British cheek-pieces can be found. Bronze bits appeared in central Europe by Ha A1 (Balkwill 1973, 437-439) but do not seem to have appeared in northern Europe until MV (Thrane 1963, 91 n. 214); bronze bits are unknown in Britain.

Phalerae

I have discussed the origins of the Isleham phalerae (List 114, 1) and concluded that they, like the Thames phalera (List 114, 2), were probably insular versions of central German phalerae of Ha B1/MIV date (O'Connor 1975, 222). These continental finds may not have been items of horse-gear (von Brunn 1968, 198) though the British examples could have been used to decorate horse-harness. The Belgian phalerae (List 114, 3) may be compared to examples in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 15, pls. XV, 122-127; XVI, 128-129) and to the example in the hoard of similar character said to be from Kalbensteinberg, Ldkr. Gunzenhausen, Bavaria (Müller-Karpe 1958, Abb. 8, 8). The Wichelen-Schellebelle phalerae could be of LBA2 date, though they may be related to the phalerae from Han and Sinsin which could be later (see p. 197).

Looped discs which may be related to these convex phalerae appear in early Urnfield burials with horse- and wagon-gear. The Mengen 1905 burial, Ldkr. Saulgau, Württemberg, contains convex discs with double loops (Inv. Arch. D130, 10) and larger discs with peripheral steps and single loops (*ibid.*, 12); the find from Hader, Ldkr. Griesbach, Bavaria, contains single- and double-looped discs (Müller-Karpe 1956, Abb. 8, 8-10, 15). Double-looped discs occur in the contemporary Swiss finds from Saint-Suplice, Vaud, and Kaisten, Aargau (Drack 1960-61, 74, Abb. 1A, 3; 1B, 3). Large looped discs are also known further north, e.g. Eilingswald, Münzenberg, Kr. Friedberg, Hesse (Hermann 1966, 32, 122 no. 368, Taf. 114A, 3).

Buttons and studs

The Isleham hoard (127) contains various tanged studs and looped buttons which have been interpreted as items of horse-gear. Tanged studs occur in the early Urnfield finds with horse- and wagon-gear from Hart an der Alz, Ldkr. Altötting, Bavaria (Müller-Karpe 1956, 66, Abb. 5, 2); Mengen 1905 (Inv. Arch. D130, 2); Staudach, Upper Austria (Müller-Karpe 1956, Abb. 10, 7), and Kressbronn, Kr. Tettnang, Swabia (Wocher 1965, 19, Abb. 4, 12-13a). There are looped studs in the Mengen 1955 burial (Inv. Arch. D129, 6), another early Urnfield find with horse- and wagon-gear. Small buttons, looped and tanged, occur in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 14-15, pls. XIV, 117-118; XV, 120-121) and there are six convex looped buttons in the contemporary hoard from Champcueil (134).

Miscellaneous items of horse-gear

The double loops in the Isleham hoard may be terrets (Fig. 45, 54) and this interpretation may apply to the D-shaped object in the same hoard (Fig. 45, 53). Two pieces in the Mengen 1905 burial are interpreted as terrets; these are rings with transverse sockets attached (Inv. Arch. D130, 11). The Isleham double loops may be compared to a piece in the Ha C find from Gernlinden, Ldkr. Fürstentfeldbruck, Bavaria (Kossack 1954a, Abb. 19B, 8).

The strap-crossings and the annular rings with loops in the Isleham (127) and Wilburton (129) hoards can be matched in later British hoards in contexts which suggest horse-gear.

For other possible items of horse-gear in LBA2 hoards see p. 368-9.

Wheeled vehicles

There are 'hub-caps' of similar form in the hoards from Wilburton (129), Isleham (127) and Canteleu (139) and the socket with stepped top in the Luzarches hoard (141) may be related. The dimensions of the terminal of the rod in the Isleham hoard matches the diameters of the sockets of the 'hub-caps' (see p. 368) suggesting that these pieces were somehow associated.

These pieces may be compared to two groups of wheeled vehicles. The first group comprises the early Urnfield finds from southern Germany and Switzerland already mentioned in the context of horse-gear. Bronze rods which might have formed the framework or chassis of a wheeled vehicle occur in the Mengen 1955 (Inv. Arch. D129, 22), Hader (Müller-Karpe 1956, Abb. 8, 16-19) and Bern-Kirchfeld, Bern (Schiek 1955-56, Abb. 1, 1-7), finds.

Remains of wheels are present only in the Hart an der Alz burial (Müller-Karpe 1956, Abb. 6-7) where the hollow bronze fittings suggest that the framework of the vehicle was of wood (*ibid.*, Abb. 5). Müller-Karpe's reconstruction of the Hart wheel appears to foreshadow the late Urnfield wheels of Stade type with bronze hub, spokes and felloe cast in one (Kossack 1971, 147 n. 14, fig. 30, 1-1a). The second group consists of Kesselwagen, bronze cauldrons mounted on frames with four wheels. All examples have wheels of solid bronze with four spokes; the wheels revolve on bronze axles. The examples from the MIII burial at Skallerup, Praesto Amt, Zealand, and from the Ha A2/B1 burial at Acholshaussen, Ldkr. Ochsenfurt, Franconia, have straight axles; the examples from Milavce, Bohemia, in a burial of Reinecke D or Ha A, Peckatel, Kr. Neustrelitz, Mecklenburg, in a burial of MIII, and Ystad, Scania, all have their axles raised (Thrane 1962a, 152-155, figs. 25-26, 32; Aner and Kersten 1976, 177-178 no. 1269, Taf. 142-143; Pescheck 1972, 30 no. 1, 50-52, Abb. 2-3, Taf. 3-5; Oldeberg 1974, 140 no. 949; Richlý 1893, 190 no. 12, Tab. LI, 14; Sprockhoff 1930a, 124-127). These wheeled cauldrons could have been cult objects (Pescheck 1972, 52-56); most come from rich burials and some may have been used as cremation urns (Childe 1951, 188). Their dimensions are smaller than those of any vehicle represented at Hart or Isleham, their complete wheels little bigger than the hub-caps from these two finds. Müller-Karpe reconstructs the Hart wheels as c. 80.0 cm in diameter (1956, Abb. 7). The Hart hub-caps have an internal flange, the external flange on the LBA2 'hub-caps' presupposes a collar fixed by the linch pin to allow the hub to rotate freely on the axle. The form of the LBA2 'hub-caps' can be matched by examples from the Swiss Lake Village of Montelier, Fribourg (Jacob-Friesen 1969, 153, Abb. 11, 1-2), which have deeper sockets and more exaggerated flanges.

It is possible that there may be hub-caps and fragments of vehicle framework or axles from LBA2 hoards but the evidence is not sufficient for any detailed reconstruction. As with the horse-gear in LBA2 hoards, the closest comparisons for the wagon-gear are in the early Urnfield burials of southern Germany and Switzerland but there is little evidence for direct connection, which should have involved the appearance of the horse- and wagon-gear in hoards of LBA1.

Since these LBA2 finds could represent the first appearance of wheeled vehicles in Britain, a brief survey of the evidence for early wheeled vehicles may be presented.

The first evidence for vehicles with disc wheels comes from Mesopotamia at the end of the fourth millennium B.C. (Piggott 1968, 271-274). The first possible evidence for spoked wheels is a thousand years later from northern Syria or eastern Turkey (Moorey 1968) but many of these wheels appear to have cross-bars rather than radial spokes (Littauer and Crouwel 1977). Disc wheels had reached the Netherlands before the end of the third millennium (van der Waals 1964, 51-54; Piggott 1968, Table II); these wheels were of one piece, disc wheels of two or three pieces were still in use in the Netherlands during the Christian era (van der Waals 1964, 69-74) and first appeared in Ireland around 400 B.C. (Lucas 1972, 19, 29-30), where they constitute the earliest evidence for wheeled vehicles. A final piece of evidence of wooden

wheels preserved is a carbonised fragment associated with material of the end of Bronze Final III from Ouroux-Mornay, Saône-et-Loire (Bonnamour 1976, 125, Taf. 33, 1).

Spoked wheels appear on depictions in Mycenaean shaft-graves and are first found in the Middle Danube during the Hungarian Middle Bronze Age (Bóna 1960, 102-105), approximately the fifteenth century B.C., contemporary with Reinecke A/B (Bóna 1975, 26-27). There are four representations of a vehicle with two spoked wheels on a pot in a burial of Reinecke B/C date from Vel'ké Raskovce, Slovakia (Vizdal 1972). Such vehicles may have derived from the region north of the Caucasus rather than from the Aegean (S. Piggott). The famous model from Trundholm, Holbaek Amt, Zealand, shows wheels with four spokes on a four-wheeled vehicle pulled by a horse; this find is of MII date (Broholm 1943, 215, M20; Thrane 1962b, fig. 18; Aner and Kersten 1976, 63-64 no. 867, Taf. 138-140). A late MII burial from Tobøl, Ribe Amt, Jutland, contains fragments of a bronze wheel with four spokes (Thrane 1962b, 87-89, 106, figs. 11-14). Rock-carvings in a burial chamber at Kivik, Scania, probably of MIII date, show a vehicle with two wheels (Althin 1945, 60-71, Taf. 77; Thrane 1962b, 108).

By the time of the Middle Bronze Age in western Europe spoked wheels were known in Scandinavia, though disc wheels had long been used in the Netherlands. The Scandinavian evidence also suggests that horses were being used for traction at this time.

Horse-gear: discussion

There is evidence of horse-gear and wheeled vehicles, often found together, from central Europe during the early Urnfield period. Scandinavian evidence for horse-drawn vehicles is a little earlier, though bronze horse-gear did not appear until MIV. The British evidence suggests that horse-gear was current during LBA2, possibly accompanied by wheeled vehicles. With the exception of the stepped phalerae, perhaps not specifically items of horse-gear, it is difficult to identify any of the LBA2 items as imports from specific areas of the continent. During LBA2, for the first time in Britain, horses were bedecked with bronze trappings and were probably attached to vehicles. Whether peaceful or not, this was surely a prestige activity, reflecting to some extent practice in central Europe and in Scandinavia.

There is scant evidence for the presence of the domesticated horse in Britain at this time. It has been suggested that the horse was domesticated in western Europe by the users of Beaker pottery (van Wijngaarden-Bakker 1975) but this is difficult to prove conclusively (Hamilton 1976, 59-60). There is insufficient evidence to conclude that the domesticated horse was present in Britain during the Early or Middle Bronze Age, except in very small numbers (*ibid.*, 87-88), and evidence for the Late Bronze Age is also slight (*ibid.*, 101-103). Only on Iron Age sites are the bones of domesticated horses commonly found.

ORNAMENTS

Disc-headed pins. LIST 115. MAP 45.

The pins with broad decorated disc-heads in the Boutigny I and Caix hoards (List 115) should be of LBA2 date. This is a heterogeneous group of pins, not easy to date (Audouze and Courtois 1970, 31-32); its distribution appears to be predominantly French, though there are two examples from Catalonia in the hoard from the Font Major, Esplugas de Francoli, Tarragona (Inv. Arch. E5, 2-3).

Pins with decorated egg-shaped heads. LIST 116. MAP 45.

These pins have horizontal bands of ornament with curvilinear or diagonal motifs; they are widespread in west central Europe and most examples belong to the earlier part of Ha B (Kubach 1977, 490-502). The Belgian examples (List 116, 2-3) may be derived from the middle Rhine (*ibid.*, 500), though the origin of the Saint-Pierre-en-Chastre pin (List 116, 1) is uncertain.

Kubach suggests (1977, 500 n. 81) that a pin from the Saint-Vincent cemetery (List 183, 9) belongs to this group but the Early Iron Age context of the pin renders this unlikely.

LBA2 pins.

Pins are very rare in LBA2 contexts; the Picardy pin in the Caix hoard (List 36, 8) and the Landau pin in the Isleham hoard (see p. 369) are both residual and Gaucher and Mohen (1974, 53) consider that the disc-headed pin in the Caix hoard (List 115, 2) is also residual. Individual pins in the LBA2 hoards from Isleham and Fenny Bentley, Derbys., are discussed elsewhere (see p. 201, 205).

Isolated finds of some common pin types may belong to LBA2, e.g. roll-headed pins, which were certainly current during LBA1 and LBA3; more pins from large collections at Saint-Pierre-en-Chastre, Fort-Harrouard and Han may belong to LBA2. It appears, nevertheless, that pin types characteristic of LBA2 are less numerous than those characteristic of LBA1 or LBA3 and this reflects the general dearth of LBA2 ornaments, whether local or imported.

Bracelets. LIST 117.

The only form of bracelet common during LBA2 is the kidney-shaped bracelet (List 117); these bracelets may be annular or penannular with transverse ribbed ornament; they are usually massive with elaborate ornament (Eluère 1975; Richter 1970, 143-154). The kidney-shaped bracelets in the Fort-Harrouard and Pontpoint hoards (List 117, 3-4) are the earliest examples, related to Ha A2 bracelets of Hassloch type, penannular with slender round section and ribs towards the terminals, which are found on the middle Rhine (Richter 1970, 142-143). The elaborately-ornamented bracelet in the Boutigny II hoard (List 117, 1) is related to the Ha B1 Pfeddersheim type, also found mainly on the middle Rhine (*ibid.*, 146-149; Taf. 72). There are two similar bracelets from France: Champigny, Aube, and Courdemanges, Marne (Eluère 1975, 27-28, fig. 1, 4-5), and the Boutigny bracelet is an extension of this distribution (*ibid.*, fig. 5). The Vézillon bracelet (List 117, 2) is probably of eastern French origin; its closest relative is in the hoard from Villar-d'Arène,

Hautes-Alpes. Eluère dates this hoard to Bronze Final IIIb (*ibid.*, 29) but Schauer has equated it with Ha B1 (1975a, 56). Hollow section and the position of the ribs relate the Huy bracelet (List 117, 5) to the Ha B3 Haimberg type (Richter 1970, 153 n. 7) and this Belgian bracelet should be of LBA3 date.

Kidney-shaped bracelets provide a rare chronological link between central Europe and northern France and demonstrate the presence of Ha A2 and Ha B1 types in LBA2 hoards.

Bracelets are otherwise rare in LBA2 contexts. The Isleham hoard contains a fragment of a ribbed bracelet (List 42, 1) which could be residual from the Middle Bronze Age, though ribbed bracelets do occur in Late Bronze Age hoards in France (see p. 86). Another fragment in the Isleham hoard may be from a Nordic MV Armring mit kreisformiger Erweiterung (see p. 369). The other fragments of bracelets in the Isleham hoard (Fig. 46A, 60-62) are undiagnostic. The bracelets in the Combon hoard (Lists 193, 2; 194, 2) are LBA3 types.

'Bucket handles'. LIST 118

The object from Rotsea (List 118, 2) may be compared to two pieces in the MIV hoard from Weisdin, Kr. Neustrelitz, Mecklenburg (Sprockhoff 1937, 22, Taf. 20, 2; Hundt 1944-50, Taf. 28, 9), which Sprockhoff describes as henkelartige Bügel. Both bear ornament similar to that on the Rotsea piece, groups of transverse lines; one has a round section, the other is flat. The German examples are somewhat smaller than the Yorkshire piece.

These Bügel may be in the form of a bucket handle but their rolled terminals render them impractical as handles for any type of European Bronze Age vessel of which I am aware; handles had more substantial hooked terminals (von Merhart 1952, Taf. 1-6, 21-22). The Weisdin pieces may be bracelets or small neck-rings incompletely curved. The Rotsea piece should be an import of LBA2; the nature of the Barrow piece (List 118, 1) is uncertain.

Razors. LIST 119.

Butler's dating of the razors from the Bargerroosterveld 1899 hoard and Weerdinger Weg (List 119, 2, 4) should place them in LBA2. Butler (1963a, 117-118) gives the Gasteren razor (List 119, 3) a similar date on account of its lugs, which he compares with those on Nordic MIV Hornerknaufmesser (Baudou 1960, 27). The conventional date for Gasteren urnfields is also LBA2 (Waterbolk 1962, 15-18) though the date of the pin from Gasteren (List 92, 3) should raise the initial date to later LBA1 (see p. 125). Though their precise date is a little uncertain, these Dutch razors are similar in form and probably contemporary. The notched razor quoted by Butler (1963a, 118; Nowothnig 1958, 166, Taf. 1, 1) from a burial at Helmsdorf-Rudloffsplan, Saxony, is of Reinecke D date (von Brunn 1968, 69 n.3) and may not be related.

Apart from the two examples in Boutigny hoard II (List 119, 1), razors appear to be unknown in LBA2 contexts in north-eastern France or Britain and rare in Brittany (Briard 1965, 183), where some razors are fragments of single-edged knives (*ibid.*, fig. 61, 6-7).

LBA2: SUMMARY

The dominant types of LBA2 are weapons; tools are comparatively rare. Typologically late palstaves occur on both sides of the Channel, those in southern Britain represent a new type, while those in France are little different from the Rosnoën palstaves of LBA1; a few palstaves of British origin can be identified in northern France, Belgium and the Netherlands. British late palstaves are probably of insular origin, perhaps derived from LBA1 forms in northern England. LBA2 winged axes, intermediate in form between LBA1 axes and LBA3 axes, are common in northern France but certainly absent from Britain and possibly from Belgium and the Netherlands. Plain socketed axes, derived from LBA1 forms, occur in several British LBA2 hoards but indented socketed axes are the axe type most characteristic of this phase. Indented axes also occur in France and there is one Dutch example, but the continental axes cannot be given chronological priority. A few shouldered axes, as well as shouldered or indented adzes, should belong to LBA2. Many of the British axes of this phase have been found in East Anglia where typologically early faceted axes also occur. A few miscellaneous tools appear in LBA2 hoards on both sides of the Channel: socketed hammers, socketed gouges, chisel blades and leather-working knives. A small group of knives with double-T-shaped hilts is known from the Netherlands; this is a northern type which may be dated to LBA2.

Weapons, spearheads, swords and their accessories, characterise LBA2 hoards in Britain and in France. The diversity of spearhead forms found in Britain is unknown on the continent where only a few British exports can be identified; small, plain pegged spearheads were the rule in northern France. A few decorated spearheads found on the continent probably belong to LBA2; some are of central European origin and Nordic spearheads occur in the Netherlands. Tubular ferrules are characteristic of LBA2 in Britain and northern France; rare examples occur in Belgium and the Netherlands.

Swords of central European origin are rarely found in western Europe during LBA2 and most examples represent the north-westward extent of an eastern French group to the Marne and the Oise. The leaf-shaped flange-hilted sword became the dominant weapon in western Europe during LBA2 and many are known throughout Britain and northern France. While it is possible to distinguish some characteristics peculiar to British and to French swords, it is not yet possible to isolate possible imports with certainty. Some of these swords are known from Belgium and the Netherlands but central European finds are rare; Iberian finds are probably to be derived from the south-western French distribution. LBA2 swords demonstrate a distribution common to south-eastern England, especially the Thames valley and the south-eastern Fen margins, and north-eastern France, especially the valleys of the Seine, Somme and Oise; they are comparatively rare in the rest of Britain and in Ireland. The distribution of long lozenge-section chapes covers the same regions as that of the associated swords.

Sheet bronze cauldrons seem to have appeared in Britain during LBA2 and a Nordic origin for these vessels may be proposed as an alternative to the conventional Mediterranean origin. Flesh-hooks appear to have complemented these cauldrons. Also in Britain, bronze horse-gear makes its first appearance during LBA2, perhaps with some evidence for wheeled vehicles; few such items are known in France and the Low Countries. With the exception of stepped phalerae, derived from central Germany, this horse-gear does not appear to have been inspired directly from the continent, though it can be fitted into a general European pattern of the adoption of bronze horse-gear and the appearance of wheeled vehicles.

Personal ornaments are very rare in LBA2 hoards though a few simple pin types were probably in use throughout the period. Decorated disc-headed pins, probably of French origin, occur in northern France and a middle Rhine form with egg-shaped heads is known in Belgium and north-eastern France; central European pins are otherwise almost unknown in western Europe during LBA2. A few kidney-shaped bracelets, also of middle Rhine origin, occur in LBA2 hoards from northern France. Razors are known in northern France and the Netherlands but appear to be absent from LBA2 hoards in Britain.

Hoards of LBA2 date are not common; there are small concentrations in the Welsh Marches, the south-eastern Fen margins, northern Hampshire and the southern Paris region (Map 46). The Wilburton material characteristic of south-eastern England and the Welsh Marches is rare in northern England (Burgess 1968b, fig. 8), Scotland (Coles 1959-60, 22-26) and Ireland (Eogan 1964, 288-293). In France similar 'Atlantic' material reaches to the Paris region and the Somme valley but does not appear to have been common on the Marne. Gaucher includes Saint-Brieuc-des-Iffs material with Longueville and Cannes-Ecluse hoard I in his Longueville culture of Bronze Final II, though the Armorican material should be later than the Marne hoards (1976, 580-581). Beyond the Somme valley Atlantic LBA2 material is scarce. South-eastern England appears to have had closer relations with north-eastern France than with any other region during LBA2. A little central European material, mainly from the Middle Rhine, reached north-eastern France, but there is no significant central European material from Britain, where there is a little evidence of influence from central Germany and the Nordic area. Decorated spearheads and double-T-hilted knives represent northern types in the Netherlands.

Burgess has claimed that 'lead bronze is common in the Saint-Brieuc-des-Iffs tradition' (1968a, 9). Analysis of objects from the Saint-Brieuc-des-Iffs hoard has shown that only four out of fifteen have a lead content of 1% or higher (Briard and Onnée 1972, 22-24), though only three out of sixteen objects in the contemporary Saint-Denis-de-Pile group of south-western France have a lead content of less than 1% and a piece of metal cake in the eponymous hoard contains 48.5% lead (Giot, Bourhis and Briard 1970, 31, tableau 14 nos. 585-600). A Bronze Final II sword and palstave from Brittany contain 1.5% and 12% lead respectively (Giot, Bourhis and Briard 1966, 21). More analyses seem to be necessary to elucidate the technological differences and similarities across the Channel during LBA2. The large-scale use of lead bronze was practised during MBA1 in north Wales (Burgess 1976a, 75).

Analyses by J. P. Northover show that British Wilburton material has a low tin content, a high level of dilution with lead and various impurities, alien to the British tradition, but apparently present in French Bronze Final II metal. This may suggest that southern Britain had to employ bronze imported from northern France and may have been cut off from insular sources of copper and tin, though not of lead (J. P. Northover).

Several British LBA2 hoards have been designated as late by Burgess (1968a, 13, 36-37), principally on the basis of the chronology of some pieces from the Isleham hoard (127). The identification of a fragment of a Carp's Tongue sword is incorrect and the 'reel-shaped object' is not part of a characteristic LBA3 bugle-shaped object. Socketed gouges occur in other LBA2 contexts and none of the lozenge-section chapes appears to be alien to this phase. The conventional chronology of cauldrons could be too late. The tanged and socketed knives cannot be matched in other LBA2 hoards but may mark the earliest appearance of these types. The accumulation of the contents of the Isleham hoard must have taken a considerable time; even so, a late eighth-century date for deposition is scarcely acceptable in the conventional chronology. Socketed gouges and tanged leather-working knives need not make the Saint-Brieuc-des-Iffs hoard late and the socketed axes in the Guilsfield and Co. Roscommon hoards could also be accepted as LBA2 types. There are transitional hoards, Combon (164) in France, and the Blackmoor, Hants, and Fulbourn Common, Cambs., the first with LBA3 bracelets and the second and third with Ewart Park swords (*ibid.*, 37 n.27-28).

CHAPTER 6

LATE BRONZE AGE 3

LATE BRONZE AGE 3

LBA3 is the British Ewart Park phase and the close links between southern Britain and northern France at this time are exemplified by the long list of types which belong to the Carp's Tongue complex and are common to both regions (Burgess 1968a, 38-39). These types correlate the Ewart Park phase with Bronze Final III in northern France (Briard 1965, 199-239; Verron 1976a, 594-596; Gaucher 1976, 583; Gaucher and Mohen 1974, 58-70; Blanchet 1976a, 36-40) and some occur also in Belgium and the southern Netherlands (Desittere 1976, 81-82, 90-92, fig. 3). Sufficient western material reached the northern Netherlands and the Nordic area to allow Butler to define a Carp's Tongue-Montelius V phase (1963a, 226-230), though he included the later Wilburton industry in this phase.

LBA3 can be correlated with the early part of the Dowris phase in Ireland (Eogan 1964, 321-323; Herity and Eogan 1977, 212-216). The Scottish chronology is more complicated; LBA3 can be correlated with the Duddingston phase (Coles 1959-60, 31, 54) but the Covesea phase (*ibid.*, 39-44, 54-55) is also relevant (see p. 212-3). Regional axe types, especially the South Welsh type in Wales and the west (see p. 167-8) and the Yorkshire type in northern England and beyond (see p. 168-9), are characteristic of LBA3 in other parts of Britain. Like Ewart Park swords, the barbed spear-heads of the Broadward complex appear in LBA3 associations over most of Britain (Burgess, Coombs and Davies 1972, 233-235).

As imports and exports of LBA2 are rare, so they are common in LBA3, and provide abundant evidence for relative chronology. Butler (1963a, 226-230) has indicated the general correlation of LBA3 with MV; only the Løvskal hoard suggests possible correlation with MIV (see p. 172). Connections with central Europe are overwhelmingly of Ha B3 date (Jockenhövel 1972). The individual types which provide the evidence for these correlations will be enumerated in the following pages.

If the greater part of LBA3 is certainly contemporary with Ha B3 and MV its beginning and end may be more problematic. The precise date of the start of LBA3 is rendered somewhat obscure by the dearth of evidence for the relative chronology of LBA2 (see p. 132) as well as by the uncertainty of the status of Ha B2 outside Bavaria (see p. 29-30). LBA3 should be succeeded by LBA4, broadly contemporary with Ha C, and this succession appears simple enough (see p. 270). However, if Thames swords continue to be regarded as the derivatives of Hallstatt swords, rather than their predecessors, then associated LBA3 types in the Bexley Heath hoard should still have been current at an advanced stage of Ha C and the implication of this late dating for the conventional chronological succession have still to be worked out, despite Cowen's recognition of the problems involved (1967, 416). Detailed discussion of the relevant evidence belongs in the next chapter.

AXES

End-winged axes. LIST 120.

During LBA3 end-winged axes, normally looped, were used in southern Britain and northern France; they constituted the dominant axe type in Brittany, but socketed axes were more common in north-eastern France and southern Britain (Briard 1965, 211-213, fig. 73, 5-11; Briard and Verron 1976b, 18; Burgess 1968a, 39, fig. 13, 4). These winged axes are small and slender, usually with a tapering butt and a loop set just below the top of the wings: the wings are usually assymmetrical, broader above than below; there is often a slight constriction below the wings, forming an S-profile, but the wings can be straight-sided. English terminology refers to these as "end-winged" axes, though the butt is rarely absent; to Briard and Verron these are axes à ailerons subterminaux (1976b, 17-19).

Moulds for end-winged axes are known from Brittany (Briard 1965, 213) and from north-eastern France (List 120, 3, 5, 7) but Hodges records none from Britain (1960).

The distribution of end-winged axes in Britain, as mapped by Burgess (1968a, fig. 14), is exclusively south-eastern, from Purbeck to the Wash, with the exception of one Cornish find in the hoard from Kenidjack, St. Just (Hencken 1932, 87-89). The absence of winged axes from British LBA2 hoards suggests that the end-winged axes in LBA3 hoards were derived from France, whether by import or local imitation, and the British distribution suggests that they were derived from north-eastern France rather than from Brittany.

End-winged axes from Belgium and the Netherlands have been listed by Desittere (1974a, 118-120, carte 3). Hoard finds are scarce: the winged axe in the Éprave hoard (List 120, 13) appears to be a western LBA3 type, while the two unlooped axes in the Berg-en-Terblijt hoard (List 120, 14) are typologically earlier and could be LBA2; I have no information about the winged axe in the Petersheim hoard (List 120, 12). End-winged axes are confined largely to the south-east of the Low Countries, in or beyond the Meuse valley, with only a single find north of the Rhine. This agrees with Tackenberg's map (1971, Karte 4a) which shows few from north-western Germany. Desittere is rightly cautious about the origins of the Dutch and Belgian winged axes (1974a, 116).

In southern and western Germany the end-winged axe was the dominant tool of the late Urnfield period. These are usually distinct from western axes with no raised butt or a slender butt, the loop often set at the very top of the wings and the constriction below the wings more marked. Such axes occur in Ha B3 hoards in southern Bavaria (Müller-Karpe 1959, 168, Abb. 61, 10, Taf. 172, 1-11; 195, 67-81) and in south-western Germany (*ibid.*, 179, Abb. 62, 13, Taf. 174A, 2-3; 174B, 1-3; 176A, 2-3; 177D, 3). They are more numerous in Hesse, on the Middle Rhine and on the Moselle (Tackenberg 1971, Karte 4a; Hermann 1966, 204: no. 15, Taf. 180, 8-13, 181-182; no. 16, Taf. 192C, 1-2; no. 20, Taf. 176C, 2-3; no. 22, Taf. 177, 1-4; no. 23, Taf. 178, 9; no. 25, Taf. 194, 1-3; no. 29, Taf. 191B,

2-3; no. 30, cf. Schauer 1972a, Abb. 1, 1-3; no. 31, cf. Kolling 1968, Taf. 52, 17-19; no. 35, Taf. 196, 5-12; 197, 1-4; no. 37, Taf. 200, 4-9; no. 38, Taf. 192A, 2-3; no. 39, Taf. 202A, 1-2, including a bronze mould; no. 41, Taf. 193, 1-4; Kolling 1968, Taf. 43, 4-8, 10-11, including a bronze mould; Taf. 45, 3-4, including a bronze mould, cf. Richter 1970, 169; Taf. 49, 2-6, 10-11, cf. Richter 1970, 172; *ibid.*, 164, Taf. 93C, 8-10; 153, Taf. 95, 12-13; Pescheck 1971, Abb. 2, 25-31; Abb. 3, 40-42, 44-53; Kubach 1977, 515, n.16). One of the axes in the Kaiserlauten hoard, Pfalz, may be western because of its broad butt and blade (Kolling 1968; Taf. 52, 18). At least one of the winged axes in the Minnis Bay hoard (156) 28, appears to be of west-German origin.

End-winged axes are also known in northern Germany (Tackenberg 1971, 13-23) and in southern Scandinavia (Thrane 1972a). Two Danish hoards contain axes which have been compared to central European Ha B3 forms: Ørbaeklund, Odense Amt, Fyn, and Jels, Haderslev Amt, Jutland (Inv. Arch. DK4, 11-12; 8, 3; Thrane 1972a, 83 n.4, 127-128), but these massive axes resemble western forms of LBA2 rather than LBA3 (see p. 134) as would be expected from their MIV contexts (Baudou 1960, 134). MIV hoards from northern Germany which contain axes similar to western LBA2 forms are: Hohenpritz, Kr. Wismar, Mecklenburg (Hundt 1955, 125, Abb. 4, 29-31); Schnega, Kr. Lüchow, Lower Saxony (Tackenberg 1971, Taf. 2, 3); and Freist-Reidewitz, Kr. Hettstedt, Anhalt (von Brunn 1968, 319 no. 67, Taf. 72, 1-4). It is difficult to identify winged axes of western LBA3 origin in Nordic hoards; the most likely candidate is the fragment in the hoard from Løvskaal, Viborg Amt, Jutland (Inv. Arch. DK6, 1; Thrane 1972a, 96, 129), found with two socketed axes of western origin (see p. 172).

Winged Adzes. LIST 121. MAP 47.

Three LBA3 hoards from the Thames estuary contain winged adzes and there is an additional example from the Somme Estuary. Unlooped winged adzes occurred in the east-Alpine area during Ha B1 (Müller-Karpe 1959, 128, Abb. 40, 3) but they are more characteristic of Ha B3. Lake Village finds are known (Gross 1883, pl. XIII, 5) and hoard finds include: Most, Bohemia (Müller-Karpe 1961, 81-83, Taf. 68, 3), Ettlingen, Ldkr. Karlsruhe, Baden (Müller-Karpe 1959, 295, Taf. 174C, 7; Richter 1970, 172), Reupelsdorf, Ldkr. Gerolzhofen, Franconia (Pescheck 1971, Abb. 3, 32), and Hochstadt, Kr. Hanau, Hesse (Schauer 1972a, 262, Abb. 1, 6). There is a single example in the MV hoard from Lerskov, Abenra Amt, Jutland (Inv. Arch. DK35, 8), and Thrane's map shows the central-European distribution of winged adzes (1972a, fig. 30). In western France winged axes occur in Bronze Final III hoards from Menez-Tosta en Gouesnach, Finistère (Briard 1965, 213, fig. 73, 6), Saint-Genouph, Indre-et-Loire (Cordier, Millotte and Riquet 1960, 126, fig. 9, 2), and Vénat, Charente (Inv. Arch. F6, 6).

The French winged axes are usually looped, with a broad, squat profile (Briard and Verron 1976b, 81-82), whereas the central European finds are usually unlooped and more slender. Thus, the adze in the Shoebury/Great Wakering hoard (List 121, 2) should be of French origin, while the adze in the Shoebury hoard (List 121, 1) is probably central European.

Socketed axes in south-eastern England. LIST 122.

LBA3 hoards in south-eastern England are usually rich in socketed axes and the most common form is that which Butler named the "south-eastern" type (1963a, 82-84; Burgess 1968a, 17, 39, fig. 13, 5-7). These axes have a sub-square mouth and a sub-rectangular section; the collar is well-defined, convex and symmetrical; below the collar is a single rib, occasionally as double rib, on unworn examples the sides of the blade are nearly parallel. These axes are often plain; when they are decorated, the most common motifs are ribbed wings, pellets and short vertical ribs, sometimes combined. Plastic wing ornament is rare (List 122). The distribution of south-eastern axes with wings or pellets is concentrated along the Sussex coast, around the Thames estuary and up the lower Thames valley, in north-west Essex, in south-east Suffolk and in northern Hertfordshire and southern Cambridgeshire; elsewhere, only isolated finds occur (Burgess 1968a, fig. 14). Within this area, certain variants occur. The Isle of Harty hoard, Kent, contains a mould for, and several examples of, axes with no collar, multiple mouth-mouldings and ribbed wing ornament set low down below the loop (Inv. Arch. GB18, 3, 9-13); similar axes occur in the hoards from Worthing, Sussex (Inv. Arch. GB37, 3), and Foulsham, Norfolk (Norwich 1966, 27, fig. 51). The Minnis Bay hoard (156) includes various other forms not strictly of south-eastern type and the Watford hoard (154) contains several south-eastern axes, but ribbed axes are dominant.

In the northern part of East Anglia many hoards contain axes with flared assymmetrical collars and vertical rib ornament on blades with diverging sides, e.g. Meldreth, Cambs, (Inv. Arch. GB, 13-20, cf. 21-29); Reach Fen, Cambs. (Inv. Arch. GB17, 7-9), with a plain axe of similar form (*ibid.*, 13); Feltwell Fen, Norfolk (Inv. Arch. GB35, 2); Carleton Rode, Norfolk (Norwich 1966, 25, pl. VI, A3); Eaton, Norwich, Norfolk (*ibid.*, 28, fig. 63); North Elmham, Norfolk, plain axes (Clough and Wade-Martins 1970-73, fig. 2, 1-9).

Axes with vertical ribs, usually three, are characteristic of hoards in the east Midlands. Davey's survey shows examples in Lincolnshire hoards from Keadby, Branston, Roxby, West Halton, South Kyme and Bagmoor (1973, figs. 31, 291-293; 32, 295-304; 33-35; 36, 347-348; 41-43) and isolated finds are numerous (*ibid.*, figs. 9, 90-95; 10-11). From Nottinghamshire, similar axes are known from the Newark (Inv. Arch. GB36, 6-8) and Nottingham (Inv. Arch. GB22, 1-4), hoards, with plain axes of similar form (*ibid.*, 5-6), and there are three examples in the Welby hoard (158).

In terms of chronology, one hoard may be noted. This was found at Southall, Middlesex, and contained four Middle Bronze Age palstaves, a massive annular bracelet, probably contemporary, a bronze mould for LBA3 socketed axes (Inv. Arch. GB51), as well as a fragment of the butt of another palstave and miscellaneous pieces of metal (Read 1895-97, 328-330). Finds of such mixed chronological content are not unique (Rowlands 1976, 213-215), though the proportion of early material is unusually large. The "copper cakes", discarded by the finders (Read 1895-97, 328), if really fragments of LBA3 plano-convex ingots, would redress the balance.

Socketed axes in northern France.

A contrast may be observed between the axe types preferred in Brittany and in north-eastern France during Bronze Final III. Winged axes outnumber socketed axes by about two to one in Brittany (Briard 1965, 211-216), though moulds for both types occur. Socketed axes are predominant in north-eastern France; Gaucher and Mohen (1974, ill. 40) list one hundred and eighty-three socketed axes from six hoards which, together, contain only eight winged axes, and these occur in only two hoards (List 120, 8-9). The Gravelle hoard (174) contains complete or fragmentary examples of about forty socketed axes, plus a mould, but no more than three winged axes (List 120, 6). It may also be noted that palstaves are rare in Bronze Final III contexts in northern France and often residual (Briard 1965, 211; Gaucher and Mohen 1974, 68), whereas the production of late palstaves continued in parts of southern England (Burgess 1968a, 17, 39).

When Butler defined the south-eastern type, he considered that it was characteristic of hoards from north-eastern France and from Belgium (1963a, 84), but the French Plainseau type, bien particulière, has recently been isolated (Gaucher and Mohen 1974, 62; Briard and Verron 1976b, 35-36). These axes have a round mouth and a blade of concave profile, in contrast to the quadrangular mouth and straighter profile usual on south-eastern axes. Other features are distinctive: a rib at the top of the collar (Gaucher and Mohen 1974, ill. 41), a double rib below the collar, a more angular blade section. Plainseau axes may be plain, or bear ornament of pellets, vertical ribs or wing ornament, ribbed, grooved or plastic. Most Plainseau axes are found in the Somme valley but they are also known in Brittany. I have been able to identify confidently only a single example in a British hoard, Minnis Bay (156) 24. Belgian finds from Melsele and Heppeneert and the Dutch find from Breda (List 123, 11, 22, 29) may be Plainseau axes. Further afield, axes in hoards from Plestlin, Kaiserlauten, Charpigny and Kerzers could also be of Plainseau type (see p.170-2), but these identifications are provisional. In the Gravelle hoard (174) axes with round mouths are few and most have quadrangular mouths, the French type atlantique (Briard and Verron 1976b, 61). Local contrasts are illustrated by two pairs of axes in the Ashmolean Museum. The first is from Amiens, Somme; both axes have round mouths but the first (1927.2173; Fig. 68, 1) has two ribs and plastic wing ornament, slender profile and angular section, indicating that it belongs to the Plainseau type, while the second (1927.2174; Fig. 68, 2) has pellet ornament and a broader straighter blade of more rounded section, and probably belongs to the south-eastern or atlantique type. The second pair is from the Seine at Paris and, while undecorated, the axes demonstrate a similar contrast in their forms (1927.2176-77; Fig. 68, 3-4).

On Plainseau and atlantique axes the most common motif is ribbed wings, though plastic wings, pellets and vertical ribs are known; other motifs are rare (Briard and Verron 1976b, 36, 61).

In north-eastern France moulds for socketed axes occur in the hoards from Déville (173), Gravelle (174), Amiens area (176) and Thiais (182).

Hoard of Bronze Final III in north-western France contain a similar variety of axes as those in the north-east (Briard 1965, 213, fig. 74). Plainseau axes may be identified in the hoards from Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 49, 493); Menez-Tosta, Finistère (Briard and Giot 1958, pl. V, 12), and Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 1, 16), as well as in other hoards (Briard and Verron 1976b, 36). Other axes with round or quadrangular mouths are present. There are moulds from, e.g. Azay-le-Rideau (Cordier, Millotte and Riquet 1959, pl. 2), Kerbulic en Plomeur, Finistère, and Kernaour en Mellac, Morbihan (Le Roux and Briard 1970, 45-48, fig. 3, 4).

The hoard from Jardin de Plantes, Nantes (Briard 1965, fig. 74, 10), with facets on the faces and a single rib below the collar, probably belongs to a heterogeneous Nordic MV type (Baudou 1960, 23, Taf. V, VIIClb, Karte 12; Tackenberg 1971, 29, Liste 6, Karte 6; cf. Sprockhoff 1941, Taf. 48, 1). The hoard from Challans, Vendée, contains an axe with five short ribs ending in pellets (Eygun 1957, pl. 4, 11) which is probably of East Anglian origin (cf. *Inv. Arch.* GB13, 19; 17, 7; 35, 2; Norwich 1966, pl. VI, A3, fig. 63).

Alongside these varieties of axes there are faceted axes (see p. 166-7), South Welsh axes (see p. 167-8) and other forms of ribbed axes distinct from the Plainseau type (Briard and Verron 1976b, 64-65).

Socketed axes in Belgium. LISTS 123-124. MAP 48.

Socketed axes in most Belgian hoards appear to form a small group distinct from Plainseau and south-eastern axes on the one hand and from Lower Meuse axes on the other. These are axes in the hoards from Hoogstraten (185), Zandbergen (188), Eprave (193), Jemeppe (195) and axes from Han (194). They have quadrangular mouths but splayed blades, usually of concave profile, and an overhanging collar is distinctive: Zandbergen; Eprave, centre left; Jemeppe, 3. Rib, wing and pellet motifs are known, but plastic wing ornament is common in relation to the total number of axes: Zandbergen; Eprave, centre left; Han; Jemeppe. A sinuous double rib motif with a pellet appears to be characteristic at Han (Mariën and Vanhaeke 1965, pl. 2) and can be matched by the axe from Wijk bij Durstede (List 123, 42). Other isolated finds are from Liège and Solières (List 123, 17-18) and more examples must remain to be identified.

A small group of axes from the lower Scheldt valley is distinguished by ornament of four or five long vertical ribs, usually ending in pellets. These axes are large, up to 13 cm long, with deep collars and broad blades (List 124). Size and ornament may relate this group to Sompting axes of LBA4 (see p. 234) but there are no local associated finds. A similar axe appears in the MV hoard from Heringsdorf, Usedom island, Pomerania, noted as an import by Sprockhoff (1956, II, 25 no. 17, Taf. 8, 6).

A type characteristic of eastern Belgium has been defined by Butler (1973b, 339-341). This is the Geistingen type, long and slender, made of thin metal; a plain, slightly conical collar rises from an angular shoulder below which there is a small loop; the concave-profile blade expands to a broad edge. Dutch and Belgian finds cluster along the lower Meuse and the lower Rhine (*ibid.*, 343 n. 25) and German finds follow the Rhine up to the Main (Tackenberg

1971, 50-51, Liste 30). The eponymous find is a hoard (190) but Geistingen axes have not been found with datable types, so their chronology is uncertain. Some examples have a curve on the side opposite the loop (Tackenberg, 1971, Taf. 19, 2-3; 20, 1-2) and this can be compared with the ornament on certain axes of LBA3 form (*ibid.*, 51-52, Taf. 20, 3-4) including Belgian examples (*ibid.*, 52 n. 185). The distribution of Geistingen axes covers an area also occupied by Lower Meuse axes (see below ; Map 49) which may suggest a chronological distinction. Perhaps Geistingen axes are later.

Socketed axes in the Netherlands. LISTS 123, 125-126. MAP 49.

This section is based on the work of Butler on local (1961b; 1973b, 330-339) and western (1963a, 85) types.

LBA3 socketed axes of western origin are confined mainly to the southern Netherlands (List 123, 29-42; Map 48). Also characteristic of the south, but with a more easterly distribution, is the Lower Meuse type (Butler 1973b, 330-339; Map 49). These axes are broad with plain collars and large loops, with rounded or quadrangular mouths and sub-rectangular section with narrow sides. Plastic wing ornament is common (*ibid.*, Abb. 9-11). Others have a deeper collar, more rounded section and vertical grooves (*ibid.*, Abb. 12). In Antwerp Museum (2331) there is one valve of a large mould for socketed axes with conical collar, large loop, long plastic wing and pellet ornament on a trapezoidal blade (*ibid.*, Abb. 15; Fig. 68, 11). Butler gives the provenance as Maastricht, though I recorded it as Roermond. The product of this mould does not appear to be a characteristic Lower Meuse axe and can best be matched in the Plainseau hoard (Fig. 65B, 6). The only associated find of a Lower Meuse axe is in the Berg-en-Terblijt hoard (209) whose chronology is uncertain; the Plainseau hoard indicates that the mould mentioned above is of LBA3 date.

Butler regards Lower Meuse axes as typologically earlier than north Dutch axes (*ibid.*, 338). He compares three axes with plastic wing ornament in the hoard from Overboe Mark, Basland, Randers Amt, Jutland (Inv. Arch. DK5, 2-4), but the date of this hoard is uncertain (Thrane 1972a, 98; 1975, 115; Butler 1973b, 338). Sprockhoff (1956, 94 n. 8) and Tackenberg (1971, 22) both date the Basland socketed axes to MV and Thrane (1975, 106) does not give a precise date. The other hoards quoted by Butler are of MV/Ha B3 date (1973b, 339): Kattenbühl, Kr. Münden, Lower Saxony (Sprockhoff 1956, 35; Tackenberg 1971, 36); Afferde, Kr. Hameln, Lower Saxony (Sprockhoff 1956, 7; Richter 1970, 172; Tackenberg 1971, 36); Dossenheim, Kr. Heidelberg, Baden (Richter 1970, 172 n. 7; Kubach 1977, 516 n. 17). Lower Meuse axes are treated here as LBA3, notwithstanding the possibility of earlier origin (see p. above).

North Dutch axes (Butler 1961b) have a deep, often angular, collar with a large loop; a bell-shaped facet is common on each blade face and the sides are often decorated with hammered grooves. There are three main forms: first, that with multiple horizontal ribs below the collar, related to north German axes mit profiliertem Tüllenmund (*ibid.*, fig. 16); second, that with wing ornament, rarely ribbed (*ibid.*, fig. 18), usually plastic (*ibid.*, fig. 19); third, that with dog-tooth ornament on the collar, combined with multiple ribs (*ibid.*, fig. 14) or with plastic wing ornament (*ibid.*, fig. 20). North Dutch

axes are most common on the Hondsrug of the north-eastern Netherlands but extend south to the Rhine (ibid., fig. 22). There is an example with multiple horizontal ribs in the Minnis Bay hoard (List 125, 2) and a fragment which could be from a similar axe in the Southchurch hoard (List 125, 1). Many hoard finds indicate that north Dutch axes are of LBA3 date.

Tackenberg's recent discussion of Late Bronze Age socketed axes in north-western Germany (1971, 23-60) includes many Dutch finds as well as comparative German material.

The hatched triangles on the collar of an axe from Hannover, Lower Saxony, suggests that this piece may be of north Dutch origin (ibid., 25, Liste 6, 8, Taf. 7, 2). Axes with plastic wing ornament are grouped into five variants depending on the form of the ornament (ibid., 34, Liste 10-14); with the exception of a few finds from Mecklenburg, most of these axes are found in western Lower Saxony, the eastern Netherlands and the middle Rhine valley (ibid., 35, Karte 9). Axes from the Schoonebeek (204) and Elzener Veen (212) hoards, with axes from Uddeler Veen and Epe (Butler 1961b, 232-233 nos. 27, 32), are included in his variant 1, with faceted blade and semicircular wings (Tackenberg 1971, Liste 10, 1-4). An axe from the Havelte hoard (202) and an axe from Onstwedde (Butler 1961b, 232 no. 22) are in variant 2, with long oval wings (Tackenberg 1971, List 11, 1-2). This appears to be a homogeneous group; most of the other axes also bear hammered grooves (ibid., Taf. 11, 1-2; 12, 2, 4; Sprockhoff 1956, Taf. 8, 1). No north Dutch axe is included in variant 3, with plain blade and semi-circular wings (Tackenberg 1971, Liste 12); this is a more widespread group and includes the axes in the Afferde and Basland hoards (ibid., Liste 12, 7, 14) which resemble Lower Meuse axes (see p.164). Variant 4, with plain blade and oval wings (ibid., Liste 13, 1-2) includes axes from Bakkeveen and Vasse (Butler 1961b, 232-233 nos. 25, 31). There are no Dutch axes in the fifth variant (Tackenberg 1971, Liste 14).

Axes with ribbed wings are likewise grouped into five variants (ibid., 36-37, Liste 15-19) but only one north Dutch axe is included (ibid., Liste 18, 1), an axe in the Schoonebeek hoard (204) with wings formed of hammered grooves (Butler 1961b, 232 no. 17). Variant 1 (Tackenberg 1971, Liste 15, 1, 9) includes the south-eastern axes from Borgeroosterveld and Helmond (List 123, 31, 36), with the axe from Klint bei Hichthausen, Kr. Land Hadeln, Lower Saxony (ibid., Liste 15, 4), listed as south-eastern by Butler (1963a, 85 no. 5), and the axe from Forst Haste, Kr. Grafschaft Schaumburg, Westphalia (Tackenberg 1971, Liste 15, 5, Taf. 13, 6), also appears to be a western type. In western Germany the distribution of axes with ribbed wing ornament is more southerly than that of axes with plastic wing ornament (ibid., Karte 9-10).

Tackenberg illustrates an axe from the hoard from Merfeld, Kr. Coesfeld, Westphalia (ibid., Liste 11, 4, Taf. 12, 4), which may be compared to the Lower Meuse axes from Echt (Butler 1973b, Abb. 12, 1-2). The Merfeld hoard is probably of MV date (Tackenberg 1971, 54). There is a more southerly group of axes of similar form (ibid., Liste 33, Taf. 21); the Echt axes may be of German origin.

North-west German axes with vertical rib ornament are related to western rather than Nordic forms by Tackenberg (*ibid.*, 39-40, Liste 20), though most do not seem to be of western origin. Possible exceptions are examples from Geseke, Kr. Lippstadt, Westphalia, and the hoard from Bergen, Rügen island (*ibid.*, Liste 20, 2, 8, Taf. 16, 1; Sprockhoff 1941, Taf. 53, 10).

The north Dutch axe in the Onstwedder Holte hoard (207) appears in a heterogeneous group of axes with curved ribs on the sides, joining to form an apex under the collar (Tackenberg 1971, 51-53, Liste 31, 4). The only axe in this group which is closely similar to the Onstwedder Holte example is that from Reepsholt, Kr. Wittmund, Lower Saxony (*ibid.*, Liste 31, 5, Taf. 7, 3).

While north Dutch axes show some local features, they appear to constitute the western part of a distribution which stretches east to the Weser and south to the Ruhr (*ibid.*, Karte 9). Lower Meuse axes appear to form a group intermediate between these Nordic axes and western axes, though the Echt axes should originate from the German Rhineland. Geistingen axes occupy a similar position in the valleys of the Rhine and Meuse and may be later.

Faceted axes. LIST 127.

The faceted axe is a characteristic insular type discussed by Hodges (1956, 29-31), Butler (1963a, 86-87) and, most recently, by Burgess and Miket (1976, 3-5). These last authors have named the most common form the Meldreth type, slender, usually with a deep plain collar demarcated by a rib and an octagonal blade section (*ibid.*, 3). Faceted axes of Meldreth type occur in LBA3 contexts throughout Britain and Ireland, though in Ireland most faceted axes have the characteristic squat Irish form (*ibid.*, 4; Eogan 1964, 293, fig. 11, 1-2). There are bronze moulds for faceted axes, e.g. from the Quantock Hills, Somerset (Brailsford 1953, 34, fig. 12, 5), and a clay mould from Jarlshof, Shetland (Burgess and Miket 1976, 4). While the hoard evidence from southern Britain suggests a LBA3 date, typological evidence raises the possibility that faceted axes may have appeared in East Anglia during LBA2 (see p. 135-6).

Faceted axes are less numerous in northern France than in Britain (*ibid.*, 3) but French examples (Briard and Verron 1976b, 37-38) occur in Bronze Final III hoards in north-eastern France (List 127, 1-4) and in Brittany, Pen-ar-Prat, Le Folgoët, Finistère, and Etables, Cotes-du-Nord (Briard 1965, fig. 74, 7, 12). There is a faceted axe with ten-sided section in the Ha B3 hoard from Ockstadt, Kr. Friedberg, Hesse (Hermann 1966, 204 no. 35, Taf. 196, 4; Kubach 1977, 507). The only example of a faceted axe of western form found in the Nordic area appears to be the example in the MV hoard from Gurki, Kr. Konitz, W. Prussia (Górki, Prov. Bydgoszcz), (La Baume 1934, 26, Bild 11, a1; Sprockhoff 1956, 24; Tackenberg 1971, 42 n. 160). These finds confirm the LBA3 date of faceted axes.

The convex collar of the products of the Havelte mould (List 127, 6) set them apart from characteristic British faceted axes. The Waasmunster axe (List 127, 5) is of similar form to the products of the Dutch mould. Tackenberg has discussed faceted axes from northern Germany (1971, 41-43, Liste 22, Karte 12), including the Gurki axe and the Havelte mould. He mentions two other moulds, one from Kölpin, Kr. Kolberg-Körlin, (see p. 232), the

other from Erkrath, Kr. Düsseldorf-Mettmann, Rhineland (*ibid.*, 42, Liste 22, 2, 59). The Erkrath mould has a convex collar and appears to have produced linear-faceted axes (Marschall, Narr and von Uslar 1954, 46, Abb. 19, 7). The Havelte and Waasmunster finds may be related to West German linear-faceted axes (see p. 232-3) and thus perhaps be of LBA4 date. Tackenberg (1971, 42) claims that the axe from Lobenhausen, Kr. Melsungen, Hesse, is of western origin (Sprockhoff 1941, Abb. 72, 1) but British axes with a shallow collar usually retain a low-set loop (Norwich 1966, fig. 62; Davey 1973, fig. 37, 355). Nordic axes with facets reaching to the collar may be distinguished from British axes by their short, broad blades and single collar moulding (Baudou 1960, Taf. IV-VI).

South Welsh socketed axes. LIST 128. MAP 50.

Evans (1881, 119-120, figs. 126-127) first recognised a distinctive type of socketed axe with a plain, crude collar from which a large loop springs, a broad, slightly trapezoidal, blade of hexagonal section bearing three long ribs, often convergent. These axes have for some time been recognised as most characteristic of south-east Wales (Fox and Hyde 1939, 390, pl. LXXXI; Savory 1958a, 37), but the hoard containing the largest number of south Welsh axes (Savory 1975, fig. 2) is from Stogursey, Somerset, across the Bristol Channel (McNeil 1973). These hoards have been termed the Llantwit-Stogursey group (Burgess 1968a, 19-21). South Welsh axes are rare in north Wales (*ibid.*, 41); finds from southern England are more common, in the west (McNeil 1973, fig. 9) and in the east (List 128, 1-15). The Stogursey hoard links south Welsh axes with the Broadward complex (McNeil 1973, 51) and the hoards from south-eastern England (List 128, 2-4, 8-9) also indicate a LBA3 date. This is confirmed by the appearance of south Welsh axes in Bronze Final III hoards in north-eastern France (List 128, 16-18). In France, south Welsh axes are most common in the west (Briard and Verron 1976b, 63-64) where they occur in Bronze Final III hoards (Jacob-Friesen 1968, 265-266), such as Menez-Tosta en Gouesnach, Finistère (Briard and Giot 1958, pls. III, 13; V, 17), Le Folgoët, Finistère (Burgess 1968a, 21 n. 83), Auvers, Manche (Jacob-Friesen 1968, Abb. 2, 4), Pont-er-Vil, Locmariaquer, Morbihan (Burgess 1968a, 21 n. 83), Notre-Dame-d'Or, Vienne (Millotte and Riquet 1959, pl. 1, 1), and Challans, Vendée (Eygun 1957, pl. 4, 13). There is a possible example in the Vénat hoard, Charente (Inv. Arch. F6, 11), and two in the hoard from St. Lawrence Valley, Jersey (Hawkes n.d. (1937), 106, pl. VIII, bottom, second left); both these hoards are predominantly Bronze Final III, but contain later types, such as Armorican socketed axes.

South Welsh axes may be presumed to have been the dominant axe type of south Wales during LBA3. Savory's maps demonstrate this, showing only one south-eastern axe from this area (1975, figs. 2-3). Most exports were to the south and east; in north Wales late palstaves and a variety of other socketed axe types appear to have been dominant during LBA3 (*ibid.*, fig. 2; Burgess 1968a, 41-42). While the moulds from Wiltshire (List 128, 14-15) may be a peripheral part of the main distribution, the mould from Egham (List 128, 12) suggests production outside this area; in default of a detailed typological study of south Welsh axes and of the ribbed axes of south-eastern England, definite conclusions cannot yet be drawn.

The origin of the south Welsh type has received more detailed attention since Butler (1963a, 91-93) suggested that it was derived from the Nordic area via the Carse Loch axe (see p. 136). Burgess (1976a) begins with the fragmentary stone mould from Gwithian, Cornwall, found in layer 3 on Site X; the LBA1 pins were found in the same layer on Site IX (*ibid.*, 69; see p. 122). This mould is for axes of similar form to the characteristic south Welsh type, but more slender (*ibid.*, 71, fig. 4.8, c, h-i). Axes of this Gwithian form occur in two hoards: Colden Common, Hants (List 128, 6), and Carr Moorside, Hunslet, Yorks. (Burgess 1976a, fig. 4.8, j). Burgess (*ibid.*, 71) is confident that the Colden Common find is a hoard of MBA2 but Rowlands (1976, 239) is less certain; the Carr Moorside hoard belongs to the LBA1 Wallington phase (Burgess 1968b, 17, 60 no. 9, fig. 8). Burgess goes on to compare Gwithian axes with certain Taunton-Hademarschen axes bearing V-ornament (1976a, 71, fig. 4.8, f-g) to support an early origin for Gwithian axes and to derive the Gwithian form from central European axes with V-ornament (*ibid.*, 72; Müller-Karpe 1959, Taf. 129; 131; 134). These central European axes are common on the middle Danube and are dated to Ha A and Ha B1 in Slovakia (Novotná 1970a, 83-87), but are rare in western Europe (see p. 136), where they are absent from associated finds. I see little evidence for this derivation, though Novotná does illustrate one, atypical, axe which resembles the Gwithian form (*ibid.*, 99 no. 801).

A degree of continuity between LBA1 socketed axes and LBA3 south Welsh axes in western Britain is possible and the Gwithian form could be roughly equivalent to the LBA2 axes of East Anglia (see p. 135) but finds of Gwithian axes are scattered and a proven LBA2 association would be helpful to confirm the chronology.

Several Nordic MIV axe forms resemble the Gwithian form (Baudou 1960, 17-18, Taf. IV, VIIA 1a) but Nordic derivation places great weight on the single import from Carse Loch and none of these supposed continental antecedents explain why the Gwithian form was adapted as the principal axe type in such a restricted area.

Yorkshire socketed axes.

Yorkshire axes are short with a comparatively broad blade, a flared collar and single horizontal rib from which the collar springs; they are characterised by their three short vertical ribs, one central, the others peripheral, often following the divergent outline of the sides (Evans 1881, 118; Fox 1932-34, 158, pl. IX, fig. 10B; Burgess 1968a, 19, 39, fig. 18, 2; Burgess and Miket 1976, 5). There is an associated form, identical save for absence of the vertical ribs, known as the Everthorpe type (Burgess 1968a, 39 n. 50, fig. 18, 1; Burgess and Miket 1976, 7).

The distribution of ribbed Yorkshire axes shows that finds are concentrated in Yorkshire, to either side of the Vale of York, with the eastern distribution spreading into Lincolnshire; other concentrations are in Northumbria, north Lancashire and the northern part of East Anglia; to the south finds reach the Thames and Somerset, the northern distribution spreads into Scotland; the only provenanced Irish finds are north-easterly (*ibid.*, fig. 2).

There are many associated finds, predominantly with other axes, like those Lincolnshire hoards noted by Burgess and Miket (*ibid.*, 7) and published by Davey (1973, figs. 33; 34-35; 37; 44, 428-429), but more variety is provided by the larger hoard from Burton upon Stather, Lincs. (*ibid.*, figs. 40-42). There are Yorkshire axes in East Anglian hoards from North Elmham, (Clough and Wade-Martins 1970-73, 15, fig. 3, 16-24) and Eaton (Norwich 1966, 28, fig. 60), Norfolk, among others; in the hoard from Cumberlow Green, Rushden, Herts. (Clark and Godwin 1940, pl. VII, second right); two examples have been claimed in the Stogursey hoard, Somerset (McNeil 1973, 49, fig. 3, 17, 27); Lancashire finds include one example in the Portfield hoard, Whalley (Davey and Forster 1975, no. 148). These hoards indicate a LBA3 date for Yorkshire socketed axes (Burgess and Miket 1976, 7).

Sprockhoff compared Yorkshire axes with Nordic ribbed axes (1941, 122, Abb. 90) to support his notion of a movement of population across the North Sea (*ibid.*, 123) but the resemblance between these types is superficial (Butler 1963a, 93). I know of no find of a Yorkshire axe on the continent.

Scottish socketed axes.

Socketed axes with three vertical ribs, of Yorkshire type and related, are common in southern and Eastern Scotland, but rare in the north and west (Coles 1959-60, Map 3, fig. 4, 2; Burgess and Miket 1976, fig. 2). Axes with rectangular section and convex collar with single horizontal rib also have a southern and eastern distribution; Coles relates some to English forms, presumably the plain Yorkshire type (1959-60, 31, Map 4, fig. 4, 1). Octagonal section faceted axes with deep, flared collar have the same distribution and probable origin (*ibid.*, 32, Map 4, fig. 4, 3). Other faceted axes, with mouth moulding rather than deep collar, are claimed as local, but few details are provided (*ibid.*, 33).

Beside these forms of English origin there are socketed axes of probable Irish origin. Bag-shaped axes with broad, recurved blades and squat axes can best be matched in Ireland and the south-easterly distribution of these forms is less marked than that of the forms mentioned in the preceding paragraph (*ibid.*, 33, Map 5, fig. 4, 4-5). A small group of Scottish axes is compared with Irish axes, called by Coles the 'Dungiven' type, and to Nordic axes mit profiliertem Tüllenmund (*ibid.*, 44-45, Map 9), but no detailed illustrations are provided. Dungiven is better known as the denomination of a form of socketed knife (Hodges 1956, 38).

Coles defined a Meldrum type of axe with multiple horizontal ribs. This type is found in eastern Scotland (1959-60, 45, Map 9). There is a possible example from Coniston, Lancs. (Davey and Forster 1975 no. 96). Coles has claimed that an example from Birse, Aberdeenshire (1959-60, fig. 4, 9), is a Nordic import; this axe has a plain mouth, a low-set loop with horizontal ribs at the same level and a faceted blade. He compares an axe from Balsmyr Mose, Bornholm (Broholm 1953, 35, 79 no. 217), perhaps from a MVI hoard (Broholm 1946, 244, M217), but this may not be a closed find (Meinander, 1954, 29-30). The Balsmyr axe belongs to the central Swedish form of the Mälar type, part of a large group of axes with long neck, plain mouth and

low-set loop (Baudou 1960, 19-21, Taf. IV, VIIB1a, Karte 10; Meinander 1954, 24-39). This central Swedish form is found in central and southern Sweden, on Bornholm, in southern Finland and eastern Norway; related forms are found from the Baltic Republics east to the middle Volga (Tallgren 1937, 30-40; Nerman 1954; Antoniewicz 1955), an interesting mirror of westward exports from Scandinavia. There are many finds but few datable associations; Baudou prefers a MIV-V date to MV-VI (1960, 20). Coles' Meldrum axes cannot be closely dated and they do not appear to be obviously of alien inspiration.

Regional variations of distribution of socketed axes in Scotland are not very clear, though extensions of northern English and Irish distributions can be recognised.

Irish socketed axes.

Socketed axes became common in Ireland only during the LBA3 Dowris phase (Eogan 1974a, 320); several major types can be identified (Hodges 1956, 29-33; Eogan 1964, 293-295; Herity and Eogan 1977, 193). The most common type is the bag-shaped form with oval section, mouth round or oval and usually plain (Eogan 1964, 294-295, fig. 11, 5). Their distribution (Hodges 1956, fig. 7) shows a northern and eastern bias which may be compared with that of other tools (Eogan 1974a, Abb. 6) and some ornaments (*ibid.*, Abb. 2A) which are rare in the south-west and contrasted with the distribution of other ornaments which favour the south-west (*ibid.*, Taf. 80, A). British finds are scattered, but there is a western bias in England and Wales (Hodges 1956, 54, fig. 7) and bag-shaped axes may have been important in north Wales (Burgess 1968a, 42); they are also known from Scotland (see p. 169). Bag-shaped axes appeared in the LBA2 Co. Roscommon hoard (Eogan 1964, 294, 346, no. 64) but they have been said to be derived from Nordic MV axes mit profiliertem Tüllenmund (*ibid.*, 294; Butler 1960a, 111-112; 1963a, 90-91) after Sprockhoff's comparison of the bag-shaped axe with ribbed mouth from Dungiven, Co. Derry (1941, 85-86, Abb. 68). Axes m-p-T. are rare in Britain, with two finds from the Thames estuary (List 125).

Faceted axes are known (Eogan 1964, 293, fig. 11, 1-2) many of characteristic squat Irish form (Burgess and Miket 1976, 4). Ribbed axes related to the Yorkshire type occur in the north-east (see p. 168) and other ribbed axes are known (Eogan 1964, 294, fig. 11, 7-8).

No socketed axe of Irish origin is known with a certain French provenance (Briard and Verron 1976b, 34).

Socketed axes of western LBA3 form in central and northern Europe.

Nordic finds of western LBA3 axes, mainly in MV contexts have been recognised for some time (Sprockhoff 1941, 86-92, Abb. 95; Butler 1963a, 82-86). Tackenberg includes several in his second group of axes with quadrangular section (1971, 48, Liste 28), with collar and single horizontal rib. The first is from Heppeneert, Belgian Limburg (List 123, 22), and others from Hesepe, Kr. Bersenbrück, Lower Saxony, the Plestin hoard, Kr. Demmin, Mecklenburg, and the Tempelburg hoard, Kr. Danziger Höhe,

Prussia (Krzyzowiniki, Prov. Gdańsk) (Liste 28, 1, 5, 10, 12; Butler 1963a, 85 nos. 6-9). Most of the other axes listed by Tackenberg could be south-eastern: Krefeld-Linn, Rheinland-Pfalz (Tackenberg 1971, Taf. 19, 1); Eschwege hoard, Hesse (Uenze 1960, Taf. 113, 5); Hochstadt hoard, Kr. Hanau, Hesse (Schauer 1972a, Abb. 1, 4-5), the second axe in the Hochstadt hoard is apparently faceted (Tackenberg 1971, Liste 32, 2); Eibingen bei Rüdelsheim hoard, Rheingaukreis, Hesse (Hermann 1966, Taf. 192, 4). The Plestlin hoard also contains an axe with X-ornament like that on the axe from Melsele (List 123, 11).

The Plestlin hoard is of MV date (Sprockhoff 1956, 51; Tackenberg 1971, 29) and contains many axes of MV common in northern Germany (*ibid.*, Listen 5, 9; 6, 14; 10, 11; 12, 11; 13, 6; 14, 7; 16, 7; 17, 4; 18, 5; 19, 2; Sprockhoff 1941, Taf. 42-46). The Tempelburg/Krzyzowiniki hoard is the most easterly find of a western LBA3 axe; this hoard has been dated to MV (Sprockhoff 1956, 64-65), though it includes a large unlooped end-winged axe of east-Alpine form (*ibid.*, 100, Taf. 10, 9) which Tackenberg claims as Ha C, dating the hoard to MVI (1971, 22, 48), but Müller-Karpe places such axes in Ha B3 (1959, 127 n. 1, Abb. 59, 18), cf. the hoard from Schönberg, Styria (Schmid 1940). The Eschwege hoard contains a plain penannular bracelet of a form known in several Ha B3 hoards from Hesse (Richter 1970, 164 no. 1027). The Hochstadt (Jockenhövel 1972, 105; Schauer 1972a, 262; Richter 1970, 159, 168) and Eibingen (Hermann 1966, 204 no. 38; Richter 1970, 168) hoards are both Ha B3.

The three axes which survive from the Amelsbüren hoard, Kr. Münster, Westphalia (Tackenberg 1971, Liste 29, 7, Taf. 18, 4-6) are certainly not Armorican but western LBA3 axes.

The Ha B3 hoard from Hangen-Weisheim, Kr. Alzey, Hesse, contains an axe with two vertical ribs (Richter 1970, 164, Taf. 930, 7) and there is a similar motif on an axe from Geseke, Kr. Lippstadt, Westphalia (Tackenberg 1971, Liste 20, 2, Taf. 16, 1). These two axes may be related to western LBA3 ribbed axes.

There is a plain axe of western form in a hoard from the region of Wiesbaden, Hesse (Hermann 1966, Taf. 193, 6). This hoard belongs to the Ha B3 (*ibid.*, 204 no. 41; Richter 1970, 166) and also contains a hollow bracelet with a large everted terminal (*ibid.*, 166 no. 1046), a predominantly Belgian form (see p. 210) a small object like a perforated drum, a French type (Jockenhövel 1972, 108 n. 18, Abb. 2, 13), and bar toggles (Hermann 1966, Taf. 193, 9-10) which can be matched at Han (see p. 196).

A hoard from Konz, Kr. Saarburg, Saarland, contains two axes which appear to be western (Kolling 1968, Taf. 43, 3-4) but examination of the original illustrations indicates that they are not (Steiner 1930, Taf. III, 9-10). Both are listed by Tackenberg as German types (1971, Liste 32, 1; 35, 5).

An axe in the hoard from Kaiserlauten, Pfalz, has a collar, two horizontal ribs, wing ornament and concave profile; this may be a Plainseau axe (Kolling 1968, Taf. 52, 20). The Kaiserlauten hoard should be dated to Ha B3 (Kubach 1977, 515-516 n. 17).

Two Swiss hoards of Ha B3 appear to contain western axes: Charpigny, Ollon, Vaud, with collar, two ribs and wing ornament, perhaps Plainseau (Bocksberger 1964, 87, fig. 28, 23), and Kerzers, Fribourg, also perhaps Plainseau (Vogt 1942, Taf. 81, 20). Less distinctive is an axe in the Echallans hoard, Vaud (Müller-Karpe 1959, 296, Taf. 178E, 1).

The hoards mentioned above all indicate that LBA3 axes of south-eastern English or north-eastern French origin were current during Ha B3 and MV but one Danish hoard may provide an earlier date. Butler recognised two fragmentary south-eastern axes in the hoard from Løvskal, Viborg Amt, Jutland (1963a, 85 no. 1, 86, 223-224, pl. XIIIb). The Løvskal hoard had been dated to MIV by Broholm (1946, 202 M84) and Thrane (Inv. Arch. DK6). Apart from these two socketed axes (*ibid.*, 4-5), the hoard contains part of a looped end-winged axe, which is probably also of western origin (see p. 160), and part of a more massive unlooped winged axe, which is less diagnostic (*ibid.*, 1-2). Also undiagnostic is a plain pegged spearhead (*ibid.*, 6). This leaves two datable Nordic products, a socketed axe with round mouth, collar, two shallow horizontal ribs, a large loop and bell-shaped facets on a blade of hexagonal section, and a penannular bracelet with ridged section, single peripheral ribs, triple central rib, and straight terminals with a triple rib and triangular perforation (*ibid.*, 3, 7). The axe is a MIV type which was probably still current in MV (Baudou 1960, 23, 178 no. 8, Taf. V, VII C1a). The bracelet belongs to the cuff-shaped type current during MIV (*ibid.*, 61, Taf. XIII, XVIII A Z). Thus, only a single object in this hoard is certainly of MIV date. Butler concluded that the south-eastern socketed axes, found in an MIV context, must have been Wilburton products (1963a, 224, 239), but neither these axes nor the looped end-winged axe occur in LBA2 contexts. The Løvskal hoard cannot be used directly to date the Wilburton industry, as Thrane has done (Inv. Arch. DK6), but rather to date the beginning of LBA3. Other Nordic contexts for the south-eastern axes are MV and the Nordic axe could be MV; with the MIV bracelet the Løvskal hoard could be dated to the MIV/MV transition. Other Danish finds of western socketed axes of LBA3 type lack associations (Thrane 1975, 105-107, figs. 60, a-b; 61a).

Butler suggests the presence of a western axe in the Ha B3 hoard from Tamachov, Bohemia (1963a, 86), but the relevant axe (Müller-Karpe 1959, 129, 283, Taf. 143B, 3) has two collar mouldings of equal size, an unusual feature on LBA3 axes.

Nordic axes in western Europe. LIST 129.

By comparison with the number of western LBA3 axes found in northern Europe, contemporary Nordic finds in the west appear to be scarce. The Koppenow axe from Braintree (List 129, 1) is a type most common during MV and it is probably of north German/Polish rather than Scandinavian origin (O'Connor 1976b). The axe from Ghent (List 129, 5) appears to be related to a form similar to the Koppenow type (Sprockhoff 1956, I, 88 no. 1a, Abb. 17, 7; II, 16, Karte 5; Tackenberg 1971, 56, Liste 36) and of contemporary date but with a more westerly distribution. The triple collar moulding is unusual, but can be matched on some Danish axes of uncertain date (Aner 1962, 214-215, Abb. 24, 1, 3).

The only Nordic axe from a datable western context is the MV axe with facets on the blade faces and a single horizontal rib in the Bronze Final III hoard from Nantes (see p. 163). To this axe may be related the small group of axes with faceted faces mentioned by Butler (1963a, 94). There are four examples, one Dutch, one English and two Irish finds without exact provenances (List 129, 2-4, 6). Butler compares an axe in the MV hoard from Magleby, Sorø Amt, Zealand (Broholm 1953, 28 no. 134; 1946, 214, M129), which belongs to the same general type as the axe in the Nantes hoard (Baudou 1960, 23, 179 no. 2, Taf. V, VII C1b) but belongs to the more common small Scandinavian form rather than the larger German form to which the French axe may be compared (Tackenberg 1971, Taf. 7, 3-5). Of the axes mentioned by Butler, only one has been accessibly illustrated (List 129, 4); this has the form of an Irish bag-shaped axe, save for the facets, and rope-moulding, and appears to be an insular product, if a copy of an imported axe (Hodges 1954, 74).

Finally, Butler mentions an unprovenanced Irish bag-shaped axe with dog-tooth ornament comparable to that on north Dutch axes (1963a, 95; see p.

Any claim to derive western LBA3 socketed axes from Nordic prototypes rests on a very small number of possible imports, mostly unprovenanced or isolated finds (*ibid.*, 94-95). The north Dutch axes (List 125) seem to have had no effect on the axe series of south-eastern England. The origins of faceted axes (see p. 166-7), south Welsh axes (see p. 167-8) and Irish bag-shaped axes (see p. 170) appear to be in LBA2 and I can discern no significant Nordic influence on western axe types during LBA3.

Socketed axes: discussion

The socketed axe was the dominant axe type of LBA3 throughout Britain, Ireland, north-eastern France, Belgium and the Netherlands and distinct regional groups can be recognised, like those of MBA2 palstaves.

In England the distribution of the south-eastern type is distinctive, though it covers the distribution of less common types of socketed axe, of end-winged axes and includes some hoards which are composed predominantly of late palstaves (e.g. Inv. Arch. GB37). The other major regional distribution in England is that of Yorkshire axes, dominant in Yorkshire and very numerous in Lincolnshire. Between these two major distributions are minor regional types in the east Midlands and the northern part of East Anglia. To the west is the concentration of south Welsh axes in the south-eastern part of Wales and across the Bristol Channel. Yorkshire axes spread north into Scotland and west across the Pennines. The dominant Irish form, the bag-shaped axe is found in Britain, where it may be especially important in north Wales and northern Scotland. A curious exception to these regional distributions is the faceted type, found throughout Britain and Ireland in greater or lesser numbers.

North-eastern France is distinguished from the north-west by a preference for socketed axes over winged axes by more than twenty to one in hoards, whereas winged axes outnumber socketed axes by two to one in Brittany. Many socketed axes in north-eastern France cannot readily be distinguished from the English south-eastern type, but a local product, especially common in the Somme valley, is the Plainseau type.

A local Belgian type appears to be present in a number of hoards and at Han; there is a single axe of this form from the south-western Netherlands. When the combined distribution of south-eastern, Plainseau and Belgian axes in the Low Countries is examined (Map 48) it appears that most examples are found to the west and south of the Meuse. Comparison may then be made with the distribution of lower Meuse axes and north Dutch axes (Map 49); this reveals that the western types are dominant in the Scheldt valley, where lower Meuse axes are absent, that western axes are rather more numerous than Lower Meuse axes over the rest of Belgium and the southern Netherlands, while Lower Meuse axes are more common in the Rhine-Meuse region. To the north of the Rhine begins the distribution of north Dutch axes, which are concentrated in eastern Drenthe. The two western axes in the northern Netherlands are balanced by the two north Dutch axes from the Thames Estuary. North Dutch axes continue a north-west German distribution and it is significant that the western edge of their distribution marches with the eastern edge of the distribution of south-eastern, Belgian and Plainseau axes. The position of Lower Meuse type is uncertain, but some are certainly of German origin. A small group of ribbed axes from the Scheldt area may be LBA4 and the same applies to Geistingen axes, found in the same general area as Lower Meuse axes.

The similarity between south-eastern axes and many axes from north-eastern France suggests that south-eastern England was in closer contact with the adjacent parts of the continent than with northern Britain; Yorkshire axes are rare south of the Fens and northern East Anglia and absent south of the Thames. South Welsh axes occur sporadically in southern and eastern England and in France, especially in the west, but not in northern Britain.

TOOLS

Socketed chisels. LIST 130.

Socketed chisels with narrow solid straight-sided blades and round mouths appeared in north-western France during Bronze Final II in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 11, pl. XII, 85-86) and continued in use during Bronze Final III (Nicolardot and Gaucher 1975, 123) though never a very common type. The Choisy-le-Roi hoard (List 130, 3) is Bronze Final III; the isolated find from Saint-Pierre-en-Port (List 130, 2) could be contemporary or earlier. The Villers-sur-Coudon chisel (List 130, 1) is an unusual form with a hollow blade, cf. a Nordic form (Baudou 1960, Taf. VII, IX, left).

Only during LBA3 did the socketed chisel appear in England (Burgess 1968a, 39-40), cf. the example in the hoard of tools from Carleton Rode, Norfolk (Norwich 1966, pl. VII, 17), alongside two examples of the socketed tool (*ibid.*, pl. VII, 11, 18) which is presumably that referred to by Burgess (1968a, 40) as the "fully socketed" type of socketed chisel. This is a separate type, predominantly insular and of LBA3 date; most finds are from south-eastern England (Thomas 1966-67) though related objects occur in Ireland during the Dowris phase (Eogan 1964, 298, fig. 12, 12). Apart from the example in the Longy hoard, Alderney (Thomas 1966-67, 39 no. 17), I know of only two examples found across the Channel, in the Marlers hoard (180), and in the Deurne hoard (196), presumably British exports. Socketed chisels with solid blades were used during LBA3 in Ireland (Eogan 1964, 296-298, fig. 12, 10); Coles records only one Scottish example (1959-60, 88).

Socketed chisels with solid blades appeared during the Early Bronze Age in the middle Danube area (Schubert 1973, 89, Taf. 34, 9; Mozolics 1967, 63) and were known in this area during the Kosziderpadlás horizon, equivalent to the early Tumulus period (*ibid.*, Mozolics 1973, 41; Novotná 1970a, 70). Forms with well-differentiated blade and socket appeared by the beginning of the Urnfield period (Eogan 1966b, 100; Novotná 1970a, 70; von Brunn 1968, 148-149) and lasted to the end of the Urnfield period, a characteristic central European type (Jockenhövel 1972, 108 n. 14). In the Nordic area socketed chisels were known from MII to MV (Baudou 1960, 26-27, Taf. VII, IX) but the form with a well-differentiated blade is not common (Sprockhoff 1956, 101-102, Taf. 11, 13-14). The hollow-bladed form with a square mouth known at Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 88), can be matched in Nordic MV contexts (Sprockhoff 1956, 101, Taf. 11, 8).

British socketed chisels were presumably derived originally from northern France and deposited in hoards only during LBA3. The origin of the Dutch and Belgian finds is uncertain (List 130, 4-6), though the gouge and broad-bladed socketed tool in the Deurne hoard could both be of British origin.

Tanged leather-working knives. LIST 131. MAP 51.

Tanged leather-working knives appeared during LBA2 (see p. 137-8) but most hoard finds belong to LBA3, whether in England (List 131, 1, 3, 5, 10, 13, 15, 17, 20-22, 24, 29), Ireland (Eogan 1964, 298, fig. 12, 13-15; Roth 1974, 44-45, I, 5-8; II, 1), north-eastern France (List 131, 38-40) or north-western France (Briard 1965, 219; Nicolardot and Gaucher 1975, 111; Roth 1974, 47, II, 1-2, 6, 8-12), so isolated finds are listed here.

Several English finds come from settlement sites (List 131, 2, 8-9, 18, 26, 31-32, 34-35) as does the Scottish example from Traprain Law (Roth 1974, 46, II, 16) and the French from La Torche en Plomeur, Finistère (*ibid.*, 47, II, 7); most of these sites could have been occupied during LBA3.

No attempt has been made here to employ any typological distinction among these tools but it may be noted that some, e.g. Carleton Rode (List 131, 20), have very narrow blades, almost straight sided, which could have been used for wood-working. Roth's type II appears to be characteristic of southern Britain and northern France (*ibid.*, Abb. 4).

Socketed gouges. LIST 132.

Socketed gouges appeared on both sides of the Channel during LBA2 (see p. 137) but they are more common during LBA3, so isolated finds from the continent are listed here. They were current during LBA3 throughout England (Burgess 1968a, 39-40), in Scotland (Coles 1959-60, 87) and in Ireland (Eogan 1964, 296, fig. 12, 8-9; 1974a, Abb. 6). Contemporary finds occur in north-eastern France (List 132, 1-3, 5-6, 8-11) and they are abundant in the north-west (Briard 1965, 219).

Jockenhövel (1972, 107-108, Abb. 2, 3-9) has noted that socketed gouges occur in several Ha B3 hoards in south-western Germany, also in Swiss Lake Villages and a Bohemian hoard. In German terminology socketed gouges are included with socketed chisels under the heading Tüllenmeissel and Jockenhövel points out (*ibid.*, 108) that, while the gouge is more common in western Europe, the chisel is dominant in central Europe, cf. the Slovak material collated by Novotná (1970a, 69-71).

Socketed gouges are rare in northern Europe and absent from hoards (Sprockhoff 1956, 102). There are examples from Seddin, Kr. Westpringnitz, Mecklenburg (Sprockhoff 1941, Taf. 52, 6), Zuhzow, Rügen island (*ibid.*, Taf. 52, 8), Hjerup, Odense Amt, Fyn (Broholm 1953, 52 no. 421a), and from the Grevenor Strasse cemetery, Münster, Westphalia (Aschemeyer 1966, 12-13, Taf. 34, 4), which has produced several MV bronzes, but the gouge cannot be closely dated (Tackenberg 1971, 61-62). These northern finds are probably of western LBA3 origin like the Belgian and Dutch finds (List 132, 12-15).

From Saint-Pierre-en-Chastre (171) there is a tanged gouge; this is a rare type which also occurs in the Carleton Rode hoard, Norfolk (Evans 1881, 173, fig. 203; Norwich 1966, 26, pl. VII, 14).

Socketed hammers. LIST 133.

The socketed hammers in the Plainseau and Marlers hoards (List 133, 4-5) share quadrangular section and plain collar with hammers in English hoards of LBA3, e.g. Minnis Bay (156), Isle of Harty, Kent (Inv. Arch. GB18, 22), and Thorndon, Suffolk (Inv. Arch. GB11, 4). The Beaudreville hammer (List 133, 2) is ornamented with pellets on the faces like the hammer in the Juvin-court hoard (List 133, 1) and may be attributed to LBA3. The Belgian hammer and the two larger examples from Fort-Harrouard (List 133, 3, 7) appear to have quadrangular section and collar.

Anvils. LIST 134.

The anvils in the Bronze Final III hoards from Gravelle and Plainseau (List 134, 10-11) belong to the same simple type as the Pont du Flandres anvil (List 134, 7) (Nicolardot and Gaucher 1975, 21-24) and the example in the Déville hoard (List 134, 9) is contemporary. The Bardouville anvil (List 134, 8) is similar to the anvil in the Fresné-la-Mère hoard, Calvados (*ibid.*, Eogan 1967, 158-160, fig. 8, 8); this hoard has been dated to Bronze Final I (Verron 1976a, 592) though its knife with a curved, double-edged blade (Eogan 1967, fig. 8, 4) can be matched in later contexts in Scotland (Coles 1959-60, 46). The Corbeil anvil (List 134, 5) belongs to the Tour de Langin type, probably of Bronze Final date (Nicolardot and Gaucher 1975, 25-27). I am uncertain whether or not the Pontpoint anvil (List 134, 6) belongs to the LBA2 hoard (137).

The T-shaped anvils from West Row and the Lusmagh hoard (List 134, 1, 3) should be dated to LBA3 by the Irish find (Eogan 1964, 345) and most of the objects from the Bog of Cullen (List 134, 4) are contemporary (*ibid.*, 347). The Scottish anvil (List 134, 2) may be related to the Bardouville and Fresné-la-Mère examples.

Bronze anvils and hammers must have been in use throughout the Late Bronze Age on both sides of the Channel with little typological change. These objects are not common and may have been reserved for specialised uses. The necessary sharpening of edges fresh from a mould and resharpening of worn edges of every edged object was probably carried out with other implements.

Saws. LIST 135.

Saws in Bronze Age hoards are usually long and rectangular, perforated at one end, with teeth on one edge only, sometimes filed but never set. British and Irish examples are known from the Middle Bronze Age onwards (Rowlands 1976, 46). There is a dagger blade reused as a saw in the Porcieu-Amblagnieu hoard, Isère, but most French associations are Bronze Final III (Nicolardot and Gaucher 1975, 39-41).

These saws were probably used for fine work; without set teeth they could not have been very efficient. Like hammers and anvils they were used from the Middle Bronze Age throughout the Late Bronze Age on both sides of the Channel.

Sickles. LIST 136. MAP 52.

Sickles are common in Ha B3 hoards from Hesse and adjacent regions. These sickles usually have a tang with a central perforation and two peripheral ribs which continue around the curved blade (Hermann 1966, 204 nos. 15, 19, 22, 23, 35; Taf. 175, 5-15, 176A; 177, 15-18; 178, 1-8, 12-15; 182, 10-16, 183, 1-4, 8-12; 197, 5-18, 198, 1-2, 4; Kolling 1968, Taf. 50, 1, 5-7, 10, 15-17; 53, 4, 8, 14, 16-21; Schauer 1972a, Abb. 1, 17-19; Pescheck 1971, Abb. 2, 11-12, 14, 16-23; 3, 38-39). This form occurs in French Bronze Final III hoards, e.g. Briod, Jura (Millotte 1963, 275-276; Millotte and Vignard 1960, 43-44, pl. XXIII, 408-420; Nicolardot and Gaucher 1975, 97-98). There is also an example in the Basland hoard, Randers Amt, Jutland (Inv. Arch. DK5, 9; Thrane 1975, 115, fig. 71, a), but the date of this hoard is debatable (see p. 164). Another Nordic find may perhaps be a fragment in the hoard from Bäk, Kr. Herzogtum Lauenburg, Holstein (Hundt 1951, Taf. V, 14), dated to MIV (*ibid.*, 46; Thrane 1975, 116), but possibly later (Tackenberg 1971, 47-48). In northern Germany these sickles appear in MV hoards (Sprockhoff 1956, 131, Taf. 20, 10, 13). They may have appeared at an earlier date in east-central Europe (von Brunn 1968, 86, Abb. 13, 49). The contexts of these Urnfield tanged sickles in north-eastern France is LBA3 (List 136, 13-15) and British examples (List 136, 1, 3, 6, 9, 11) were recognised as intrusive by Fox (1941, 146-147). The Han sickle probably belongs to this type (List 136, 19).

Another form of sickle occurs in some of the late Urnfield hoards mentioned above (Hermann 1966, Taf. 184, 5-7, 13-14; 198, 3, 5-6; Millotte and Vignard 1960, pl. XXIII, 421-429), also in Ha B3 hoards from Heimbach, Kr. Fulda, and Eschwege, Kr. Eschwege, Hesse (Richter 1970, 164, 172, Taf. 92B, 3-4; 95, 9-10). These sickles lack a tang and have blades less convex than the tanged sickles, but have a knob and ribs, usually three, sometimes two. This is a long-lived form in central Europe (Richter 1970, 123), though it is known from MV contexts (Sprockhoff 1956, 130-131, Taf. 20, 8). This Urnfield variant occurs in north-eastern France at Mont-Saint-Quentin (List 136, 16), at Ny and Grands Malades in Belgium (List 136, 17-18), and in the Berg-en-Terblijt hoard (List 136, 21). There is no reliable local dating evidence but these sickles could be of Ha B3 west German origin.

A characteristic form of knobbed sickle occurs in several LBA3 hoards in south-eastern England (List 136, 2-5, 7-8, 10) and may be named after Minnis Bay which contains two examples. This form has a straight or very slightly convex blade with a small knob in the centre of an angular butt and a broad tip. With the exception of the Marden hoard, all English finds are from the lower Thames region (Map 52). The LBA3 chronology is confirmed by French finds in the Marlers (List 136, 15) and Prairie de Mauves (Briard 1966a, pl. 21, 257) hoards.

LBA3 sickles demonstrate contact between the middle Rhine area and the Thames estuary via north-eastern France and the export of lower Thames products to northern France.

The precise date of the Heiloo find (List 136, 20) is uncertain, but it demonstrates that stone tools were being used alongside bronze during the Dutch Late Bronze Age.

Double-edged socketed knives. LIST 137. MAP 53.

Double-edged socketed knives are a characteristic LBA3 type in Britain and Ireland (Hodges 1956, 38; Burgess 1968a, 39) though there is a LBA2 find in the Isleham hoard (127); these knives are also common in Bronze Final III contexts in north-western France (Briard 1965, 208). Hoard finds from north-eastern France are contemporary (List 137, 1, 4, 6-9) and the isolated finds should also be LBA3 (List 137, 2-3, 5, 10). Most of these knives appear to belong to the Thorndon type (Inv. Arch. GB11, 2) most common in south-eastern England (Hodges 1956, 38, fig. 4), though one of the knives in the Juvincourt hoard (Jockenhövel and Smolla 1975, fig. 3, 19) resembles the Irish Kells type with shouldered blade (Hodges 1956, 38; Eogan 1964, 296, fig. 12, 3). The Plainseau and Charenton knives (List 137, 7, 10) share lozenge-section blade and triple-ribbed socket, perhaps a local form.

Double-edged socketed knives are absent from the Low Countries (Desittere 1976, 81 n. 4). The only central European association is in the Ha B3 hoard from Kaiserlauten, Pfalz (Jockenhövel 1972, 105, Abb. 2, 10). There are two Nordic finds: Tostedt, Kr. Harburg, Lower Saxony and the MV Böck hoard, Kr. Randow, Pomerania (Butler 1963a, 115; Sprockhoff 1956, 77, Abb. 4, 1-2).

Double-edged tanged knives. LIST 138.

Burgess (1968a, 39, fig. 13, 15) includes double-edged knives with riveted tangs in his list of Carp's Tongue types and illustrates an unprovenanced example with a broad midrib and narrow tang. This is the form most common in Breton hoards (Briard 1965, 208, fig. 72, 5) and it occurs at Saint-Pierre-en-Chastre, Déville, Dreuil, Marlers and Ghlin (List 138, 1-3, 5, 7). Knives with ribbed tangs occur in Britain first in the Isleham hoard (127), also in the hoards from Grays Thurrock (148), Broadness, Kent (Burgess, Coombs and Davies 1972, fig. 14, 45), in the Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 94), at Highdown, Sussex (Curwen 1954, fig. 61, 4), and in Ireland (Hodges 1956, 39; Eogan 1964, 296, fig. 12, 4). The examples from Saint-Pierre-en-Chastre and Dreuil (List 138, 1, 3) may be of British origin.

Knives with flanged tangs are rarer; there is one in the Grays Thurrock hoard (148) and one from Saint-Pierre-en-Chastre (List 138, 1). The Belgian knives with broad, unperforated tangs from Wichelen and Ciney (List 138, 6, 8) may be related.

Carp's Tongue knives. LIST 139. MAP 54.

A variety of knives, racloirs, sub-rectangular or triangular in shape, is current in Breton Carp's Tongue hoards (Briard 1965, 219; Nicolardot and Gaucher 1975, 101-103). The most characteristic form is known to British archaeologists as the 'hog's-back knife' (Burgess 1968a, 38, fig. 13, 10). British finds of Carp's Tongue knives appear to be confined to south-eastern England in LBA3 hoards (List 139, 1-8); there are contemporary finds in north-eastern France (List 139, 9-10) but fewer than in Britain. These knives are among the Carp's Tongue types absent from the Low Countries (Desittere 1976, 81 n. 4) and I know of no find from central or northern Europe.

Single-edged tanged knives. LIST 140. MAP 55.

Single-edged tanged knives are absent from LBA2 hoards so all late Urnfield tanged knives are discussed here. Most scholars divide the single-edged tanged knives of Ha B into two chronological groups. On most knives the blade is convex towards the tang; the earlier group has a curved blade and the later group a straight blade (Rřhovský 1972, 61-71). Swiss Lake Villages have produced many Ha B knives (Ruoff 1974, 40-41); early knives have blades decorated, often with concentric semi-circles (*ibid.*, 27, 41-42, Taf. 35, 6-9; 36, 1-4), while knives of late Ha B have little or no ornament on their straight-backed blades (*ibid.*, 27, 42-44, Taf. 36, 5-9). Rychner equates this sequence with Bronze Final IIIa and IIIb (1976, 42-43). In Müller-Karpe's scheme knives with approximately symmetrical blade outlines are characteristic of Ha B1 (1959, Abb. 40, 9; 42, 14-16), while knives with the blade convex towards the tang are dated to Ha B2 and Ha B3; Ha B2 knives are usually decorated (*ibid.*, Abb. 50, 7-8; 52, 1-2, 13; 53, 1), while Ha B3 knives usually have undecorated blades (*ibid.*, Abb. 599; 60, 10, 12; 62, 14). Ha B3 hoards in Hesse contain tanged knives with undecorated blades with straight backs and stops on the tangs (Hermann 1966, 204 nos. 15, 25, Taf. 185, 3-8; 195, 1-2).

Late Urnfield tanged knives are common in northern Germany and a detailed typology has been set out by Sprockhoff (1956, 106-108, Abb. 22, 2-7). Most belong to MV but some are claimed as MIV: Hohenbõddenstedt, Kr. Salzwedel, Saxony (*ibid.*, 106, Abb. 22, 2; von Brunn 1953, 17, Abb. 1, 8; Tackenberg 1971, 116, Liste 55, 4), with plain tang, straight back and semi-circular ornament, and Haassel, Kr. Uelzen, Lower Saxony (Sprockhoff 1937, Taf. 3, 14; 1956, 107; Tackenberg 1971, 110, Liste 53, 8), with stopped tang, slightly curved decorated blade. Tackenberg has discussed knives transitional to late Urnfield/MV forms (*ibid.*, 108-110, Liste 53-54, Karte 21) and Sprockhoff's MV typology (*ibid.*, 114-119, Liste 55-58, Karte 22). He considers that the plain tang appeared in MIV (*ibid.*, 116), earlier than the stopped tang of Ha B2/B3 and MV (*ibid.*, 117-119), and dates the Hohenbõddenstedt and Haassel knives to MV (*ibid.*, 110, 116; Thrane 1972b, 194).

Nicolardot and Gaucher allow both Bronze Final II and III dates for French finds of late Urnfield tanged knives. The associations of Giraumont and Choisy-le-Roi (List 140, 3, 6) indicate Bronze Final III like Lyzel (List 140, 5) though this knife is not a characteristic late Urnfield form. The knives from Han and Sinsin (List 140, 9, 11) with curved decorated backs could be of early Ha B date (Desittere 1972b, 160; Mariën 1974, 227), possibly LBA2. The knives with semi-circular ornament from Saint-Pierre-en-Chastre, Mohiville and Prov. Namur (List 140, 4, 10, 12) appear to occupy an intermediate position. The undecorated examples with straight blades and stopped or ribbed tangs should be Ha B3 forms (List 140, 1-2, 7-8) and the Grays Thurrock hoard confirms a LBA3 date.

Single-edged socketed knives. LIST 141. MAP 55.

Single-edged socketed knives are usually dated to HA B3, though a few finds may be earlier (Thrane 1972b, 208-210, 226, 227, Fundliste 3). Such knives of Ha B3 date occur in south-western Germnay (1959, 179, Abb. 62, 15) and Hesse (Hermann 1966, 204 nos. 15, 25, 30, Taf. 185, 2; 195, 2; Schauer 1972a, Abb. 1, 35-36), with plain or ribbed sockets and straight or curved blades, undecorated. Most Swiss socketed knives have the straight blade characteristic of late Ha B (Ruoff 1974, 93, Karte III), though Rychner places an example with a curved blade in Bronze Final III B (1976, 43).

French finds are dated to Bronze Final III, though some blades are curved or decorated (Nicolardot and Gaucher 1975, 65, figs. 1-3). The Juvincourt, Plainseau and Choisy-le-Roi associations are Bronze Final III (List 141, 3, 5-6). There are contemporary finds in western France in the hoards from Pont-er-Vil en Locmariaquer, Morbihan (Briard 1965, 208), and Vénat, Charente (Nicolardot and Gaucher 1975, 65; Inv. Arch. F6, 31-33). The other finds from Britain and north-eastern France are probably also of LBA3 (List 141, 1-2, 4, 7).

Both Sprockhoff (1956, 105-106) and Tackenberg (1971, 119-123, Liste 59) regard the numerous north German finds of single-edged socketed knives as MV. These have a more westerly distribution than contemporary tanged knives (*ibid.*, Karte 22-23) and this distribution continues into the Netherlands (Butler 1968-69, 208-216), where twelve finds are known (*ibid.*, 223; Map 55), and all the hoard finds should be LBA3: Havelte (202), Oud-Schoonebeek (204), Bruggelen (205) and Elzener Veen (212). Late Urnfield tanged knives are unknown in the Netherlands as are LBA3 double-edged knives of western form. Whether these Dutch knives are imports or local copies, they appear to represent the westerly extent of a north German distribution.

Single-edged solid-hilted knives. LIST 142. MAP 55.

A few late Urnfield single-edged knives have a solid hilt with annular or bifid terminal; they have recently been discussed by Jockenhövel and Smolla (1975, 204-205, 210, figs. 6-8). All dated examples belong to Ha B3/MV, including the LBA3 finds from Juvincourt and Dreuil (List 142). Their distribution is predominantly Alpine, mainly westerly, with another concentration in central and northern Germany, reaching Gotland in the north and Dreuil in the north-west. The Juvincourt and Dreuil knives, with bifid terminals, are probably of west Alpine origin. Knives with annular terminals were probably produced further east in the Alps.

Cast perforated discs. LIST 143.

These enigmatic objects are roughly circular with a central circular perforation surrounded by a low flange on the upper surface. Some are unfinished and have been described as risers from the casting of socketed tools (List 143, 2), while Evans long ago noted that the Yattendon example was finished (1881, 403); this disc was too corroded for analysis by Coghlan (1970).

The dimensions of these discs show no great variation. All the British finds are from LBA3 hoards (List 143, 1-4, 6), except that from the Heathrow site which has produced Early Iron Age pottery. The Belgian find is also LBA3 (List 143, 8); while the Caix hoard is LBA2 (List 143, 7), there is a fragment of a cast perforated disc in the Bronze Final III hoard from Crapon en Planguenoual, Cotes-du-Nord (Briard, Le Roux and Onnée 1973, 45, fig. 5, 71).

Fish-hooks. LIST 144.

Bronze fish-hooks, of the same form as the modern implements are common finds on Lake Village sites (van Muyden and Colobm 1896, pl. XXXII; Clark 1948, 70-72; Wyss 1971, 141-142, Abb. 22) and there is little evidence for the use of bronze hooks after the Bronze Age (Desittere and; Weissenborn 1977, 43-44). Hoard finds confirm the currency of bronze hooks during the French Late Bronze Age: Larnaud, Jura (Chantre 1875, pl. XLIII, 7-10), and Vénat, Charente (George and Chauvet 1895, 165-166; Inv. Arch. F6, 106). If their provenances are reliable, these fish-hooks (List 144) probably represent Lake Village influence, though they can only be a small part of the evidence for fishing during the Late Bronze Age.

WEAPONS

Spearheads. LIST 145-146.

The spearheads in LBA3 hoards in southern Britain and northern France are usually pegged with elliptical or leaf-shaped blades. Large spearheads are rare (see below); most are between 10 cm and 30 cm long. The variety of forms known during the Wilburton phase has disappeared, though a novel form is the curious barbed spearhead of the Broadward complex (see p. 182). The common pegged spearheads often have ornament on the socket mouth; this usually consists of bands of lines, sometimes of dots or notches (Inv. Arch. GB11, 1; 17, 6, 48; 23, 4, 8; 35, 5, 6; 53, 2; Grays Thurrock (148) 2; Minnis Bay (156) 13). Most of the spearheads in the Watford hoard (154) are decorated. This range of form and ornament occurs in southern Britain and Brittany (Burgess 1968a, 39, fig. 13, 18-19; Briard 1965, 216). In north-eastern France decorated sockets occur on spearheads in the Juvincourt (163), Combon (164), Plainseau (178), ? Saint-Roch (179) and Bonneville (183) hoards.

Mariën (1973a, 128, fig. 3) has isolated a group of spearheads from the basin of the Scheldt, exemplified by an example from Han (*ibid.*, fig. 1, 1). These pegged spearheads have long blades and short sockets; there is a fragment in the Berg-en-Terblijt hoard (List 145, 7), north-eastern French

finds (List 145, 3-6) include one in the Giraumont hoard and a couple of insular finds may be noted (List 145, 1-2). While current during LBA3, these spearheads could have appeared earlier.

The common Nordic MV spearhead is known as the West Baltic type, a large group characterised by solid convex blade and bands of incised lines on the socket, rivet holes are usually absent. These spearheads occur mainly in southern Scandinavia and northern Germany and are considered to be derived from late Urnfield spearheads of Lake Village origin (Jacob-Friesen 1967, 250-261, Karte 16; Tackenberg 1971, 82-84). There is one Dutch find from Eindhoven (List 146, 1) and the spearhead from Hericke could be West Baltic or late Urnfield (Jacob-Friesen 1967, 256, 259; Tackenberg 1971, 82-84; Thrane 1975, 276). There is an Urnfield spearhead from Meerlo (List 146, 4). Thrane has provided a composite map of West Baltic and Urnfield spearheads (1975, 59-61, 276, fig. 30).

More detailed study would be necessary to distinguish certain examples of central or north European spearheads among the decorated spearheads of southern Britain and northern France during LBA3, but it is interesting to note that only in this phase did ornamental sockets become common in western Europe, at a time when this was a regular feature in central and northern Europe. This fashion may be reflected in the gold-ornamented spearheads of LBA3 in northern Britain and Ireland (Coles, Coutts and Ryder 1964, 191-193; Coles 1971a).

Jacob-Friesen has isolated a small group of spearheads in Oldenburg and the eastern Netherlands; these are plain pegged spearheads of thin bronze, with relatively long sockets, probably of MV date (1967, 275-276). There are two examples from the northern Netherlands (List 146, 2-3). The spearhead in the De Dellen hoard (206) may also have Nordic relations. As with earlier spearhead types, the Dutch finds of LBA3 represent the western extent of Nordic and north-west German distributions.

Beside the pegged spearheads, plain or decorated, in British LBA3 hoards of Carp's Tongue character there are the barbed spearheads of the contemporary Broadward complex (Burgess, Coombs and Davies 1972; Coombs 1974b). These spearheads are scattered throughout southern Britain but most examples occur in the Thames valley (Burgess, Coombs and Davies 1972, fig. 1b) and the distribution of Broadward hoards (*ibid.*, fig. 1c) is more westerly than that of 'Carp's Tongue' hoards (Burgess 1968a, fig. 14). There is no complete example of a barbed spearhead from the continent though there are fragments in the Bronze Final III hoards from Longy, Alderney (Kendrick 1928, 63, fig. 30, vi, pl. VII), and Crapon en Planguenoual, Cotes-du-Nord (Briard, Le Roux and Onnée 1973, 45, fig. 5, 62). A spearhead in the Broadness hoard, Kent, has an elliptical blade outlined by grooves (Burgess, Coombs and Davies 1972, fig. 13, 24), a feature which can be matched on an example from the Seine above Villeneuve-Saint-Georges, Val-de-Marne (de Mortillet 1903, pl. LXXXVIII, 1097).

Tubular ferrules with disc terminals. LIST 147.

From Han and De Dellen (List 147) come two long tubular ferrules with ribs above small disc terminals. The Han ferrules may have been associated

with the large spearhead (Mariën 1973a, 127), which suggests a LBA3 date and the presence of an iron rivet in this ferrule also suggests a developed Late Bronze Age date. The De Dellen hoard should also be LBA3. As Mariën has pointed out (*ibid.*, 128) these ferrules represent a continuation of a western LBA2 tradition and both finds are alien to their local contexts: the ? Bruggelen ferrule (List 107, 9) may also belong to this group but its terminal is missing.

These ferrules were probably produced in the Low Countries, for they cannot be matched in British or French LBA2 contexts. Long tubular ferrules were still employed in Britain during LBA3 (Burgess, Coombs and Davies 1972, 216, figs. 14, 34-42; 22, 3, 4, 7; 26, 3) but these have plain terminals and disc terminals occur only on short ferrules (*ibid.*, 216).

Stockstadt swords. LIST 148. MAP 56.

Most of this small group of solid-hilted swords are Schalenknaufschwerter, richly decorated with three ribs on the grip, convex shoulders and decoration outlining the ricasso (Müller-Karpe 1961, 49-51). None has been found in a datable context; Müller-Karpe places Stockstadt swords in Ha B1 and Ha B2 on typological grounds. The French sword (List 148, 1) with its oval pommel is a precursor of the Mörigen type, dated to Ha B2 (*ibid.*, 50). The westerly distribution of Stockstadt swords complements the more easterly distribution of Schalenknaufschwerter of Königsdorf type (*ibid.*, Taf. 96).

Mörigen swords. LIST 149. MAP 56.

These solid-hilted swords have broad shallow shoulders with straight bases and a V-notch; the swollen grip usually has three transverse bands of ornament and expands to an oval pommel, slightly concave. Müller-Karpe (1961, 73-78) recognises three variants: the first with three multiple ribs on the grip; the second with three multiple ribs and false rivets; the third with the central rib replaced by another motif or absent altogether. The blade is usually outlined by ribs. Mörigen swords belong to Ha B3.

The Déville hoard of LBA3 is the only associated find of a Mörigen sword in western Europe (List 149, 2); this hilt and both Dutch swords (List 149, 4-5) belong to variant I, absent from the Lake Villages, most common east of the Rhine from the Alps to the Baltic, with a concentration on the lower Main (*ibid.*, Taf. 99). Swords of variant II are most common in the western Alps, but absent from northern France (*ibid.*). Variant III is a small group which includes the sword from Ghent (List 149, 3).

Our Mörigen swords are probably of middle Rhine origin like other LBA3 types of Urnfield origin.

Auvernier swords. LIST 150. MAP 56.

Auvernier swords resemble Mörigen swords in the form of their shoulders but the grip is broader with an inset for inlay; the pommel is oval and convex with an organic element. The blade usually has the ribs characteristic also of Mörigen swords. While developed from earlier forms (Thrane 1968, 202 n.240) Auvernier swords are dated to Ha B3 and MV (Müller-Karpe 1961, 79-80).

The only western association, the Wickham Park hoard (List 150, 1), is LBA3, though the fragment in this hoard could be from a Tachlovice sword.; The distribution of Auvernier swords stretches from the Western Alps to Sweden (*ibid.*, Taf. 100); additional Nordic finds have been listed by Thrane (1968, 217, Fundliste 4, fig. 28; 1975, 283, Fundliste 17, fig. 120). Compared with Tachlovice swords, Auvernier swords are rare in France (Vuailat 1969). None of the three possible Auvernier swords from the Somme valley (List 150, 2-4) is preserved. The comparatively homogeneous forms of the complicated Auvernier hilt leads Müller-Karpe to suggest that all examples were produced in southern Germany and Switzerland (1961, 80). There is an Auvernier sword in a Ha C context in barrow IX, Chavéria, Jura (Vuailat 1977, 54-67, 121, 128-129).

Tachlovice swords. LIST 151. MAP 56.

Tachlovice swords resemble Auvernier swords in all respects except the pommel which is concave. They are dated to Ha B3 though continuation into Ha C is possible (Müller-Karpe 1961, 81-82). The main distribution of Tachlovice swords is more easterly than that of Auvernier swords (*ibid.*, Taf. 100; Thrane 1975, fig. 120), though Tachlovice swords appear to be more common in eastern France (Vuailat 1969, figs. 4-5). Müller-Karpe suggests that Tachlovice swords were produced in Bohemia and the eastern Alps and the French finds probably originated in this area (*ibid.*, 287; Müller-Karpe 1961, 82).

Weltenburg swords. LIST 152. MAP 56.

Antennae-pommel swords of Weltenburg type appear during Ha B3 but continue into Ha C (Müller-Karpe 1961, 59-62); they are found from northern Italy to the Baltic with a concentration around Lake Geneva (*ibid.*, Taf. 98; Thrane 1968, 216-217, Fundliste 3, fig. 21). The Thiant sword (List 152, 1) appears to have a ricasso, which suggests that it is of south-west German or Swiss origin (Müller-Karpe 1961, 61); this is the only antennae-pommel sword from the Atlantic area which can be attributed confidently to a central European type. Thrane's map (1975, fig. 119) places a Weltenburg sword at the mouth of the Somme, but I can find no documentation for this; he may have mapped the Heilly sword (List 153, 3) after Sprockhoff (1934, Taf. 40).

Antennae-pommel swords. LIST 153. MAP 56.

The earliest antennae-pommel swords were the Lipovka type, often with flanged-hilts (Müller-Karpe 1961, 52-54). These appeared in Ha B2 according to Müller-Karpe, like antennae-pommel swords of Flörsheim (*ibid.*, 55-56), Zürich (*ibid.*, 57-58) and Tarquinia (*ibid.*, 63-67) types. Associated finds are rare and dating rests largely on typology; Thrane has suggested that Lipovka and Flörsheim swords appeared in Ha B1 (1968, 165-168).

There are several antennae-pommel swords from Britain, north-eastern France and the Netherlands which cannot be attributed to any of Müller-Karpe's types. The finest is the Witham sword (List 153, 1) considered to be of Nordic origin by Sprockhoff (1934, Taf. 41) and Thrane (1975, fig. 119). The incised lines on the grip of this sword are unusual, ribs being normal.

The triple lines on the Witham sword can be matched on an antennae-pommel sword in the MV hoard from Stolenschin, Kr. Wongrowitz, Posen (Stolezyn, Prov. Poznan) (Sprockhoff 1934, 98 no. 37, Taf. 15, 15; 1956, 64). The Onnen sword (List 153, 6) is of poorer quality than the Witham sword and it is the westernmost continental find of a Nordic antennae pommel sword (Sprockhoff 1934, Taf. 41; 1951, 121, Karte 1; Thrane 1975, fig. 119). The Dutch sword also lacks parallels but it may be compared with a sword from Renneberg, Kr. Oliva, West Prussia (Prov. Gdansk) (Sprockhoff 1956, Taf. 1, 8), found with a Weltenburg sword (*ibid.*, 54, Taf. 1, 9; 1934, 98 nos. 33-34, Taf. 11, 10; Müller-Karpe 1961, 59, 61, 117, Taf. 57, 12). The precise origins of the Witham and Onnen swords cannot be identified but both were probably produced on the south coast of the Baltic during MV.

None of the other antennae pommel swords can confidently be attributed to any particular type, though all should be of LBA3 date (List 153, 2-5). The re-use of a penannular bracelet as a pommel on the socketed sword in the Whittingham hoard (List 160, 9) may have been inspired by antennae-pommel swords (Cowen and Maryon 1935, 282). Coombs (1974a, 34) has described a sword of uncertain provenance (*ibid.*, Abb. 2, 1; Burgess 1968a, fig. 17, 2) as an Antennenschwert but there seems to be no justification for this as the pommel is missing and the remaining part of the hilt resembles none of the diagnostic types of antennae-pommel swords and the blade appears to be in insular form.

Swords with oval bronze pommels. LIST 154.

A small group of British swords is characterised by an oval bronze pommel, either separate from, or integral with, the hilt. Scottish finds predominate (List 154, 3-7) and two are from hoards (List 154, 3, 5), both associated with swan's-neck sunflower pins (Coles 1958-59, 7); Coles considers that these swords may be confined to the Tarves phase of the Scottish Late Bronze Age, dated to the sixth and fifth centuries (*ibid.*, 52-53). However, Eogan (1974b, 98) has pointed out that Coles' chronology may be unduly late and suggests that the Tarves hoard could be of LBA3 date (see p.204).

Oval pommels occur on central European Rundknaufschwerter, known from Ha A to Ha C but most numerous during Ha B3 (Müller-Karpe 1961, 68-72). Nordic swords with oval pommels were named Nierenknaufschwerter by Sprockhoff; they appeared in MIV but most examples belong to MV (Sprockhoff 1934, 18-25; 1956, 72-73; Thrane 1975, 45, n2). In both of these groups the pommel may be organic or metallic.

There is a Nordic miniature sword with a kidney-shaped pommel in the Bronze Final III Petit-Villatte hoard, Cher (Mohen 1971, 29-31, fig. 1), which suggests possible Nordic influence. Earlier, a Hemigkofen sword from the Loire near Orléans, Loiret, has a separate bronze hilt-plate with an oval pommel (*ibid.*, 34, fig. 3), the same technique employed on the sword in the Grosvenor Crescent hoard (List 156, 5).

Little is known of the form of organic pommels on flange-hilted swords, especially in Britain. Oval bronze pommels become more common towards the end of the Late Bronze Age in central and northern Europe and the form of the blades on the British bronze-pommel swords suggests that they also

belong to the later part of the Late Bronze Age. The northerly distribution in Britain may suggest Nordic influence, though Thrane considers that Nordic kidney-pommel swords appeared as a result of influence from central Europe through Germany (1975, 45). The appearance of bronze pommels on British swords may reflect a general European fashion.

Klein-Auheim swords. LIST 155. MAP 57.

These late Urnfield flange-hilted swords are long, between 69 and 86 cm, with broad grips swollen low down, fish-tail pommels and straight shoulders; there are usually four rivet-holes in the grip and four in the shoulders. The blades have elaborate sections with ribs and grooves; the ricasso is flanked by curvilinear ornament. They are dated to Ha B3 on typological evidence by Schauer (1971, 182-183) who prefers the denomination 'Grossauheim'. Their main distribution is on the middle Rhine and upper Main (*ibid.*, Taf. 122A; 1972b, 113, Abb. 1) in the area of distribution of earlier Mainz swords (see p. 142). Contemporary with Klein-Auheim swords, Kesselstadt swords were probably produced further north between the Main and the Ruhr and Mâcon swords to the west in south-eastern France (Schauer 1971, 185).

On the basis of a sword with its tip deliberately broken deposited on Rhine gravel in the vicinity of Speyer, Pflaz, Schauer (1972b) suggests that Klein-Auheim swords were votive offerings because a display weapon would not have been treated in such a way.

The French finds of Klein-Auheim swords (List 155) are probably of middle Rhine origin like contemporary Mörrigen swords (see p. 183).

Port-Nidau swords. LIST 156. MAP 57.

This type of late Urnfield long sword (Cowen 1955, 106-108; Gaucher and Mohen 1972, 543), flange-hilted with groups of curvilinear ornament on the blade and flanking the ricasso, was not included by Schauer, who relegated the eponymous sword to a variant of the Ha B2 Locras type (1971, 178 no. 531). No associated find is known.

Miscellaneous late Urnfield flange-hilted swords. LIST 157. MAP 57.

The sword from Rouen does not appear to belong to any specific type (List 157, 2); its length, 80.3 cm, relates it to late Urnfield long swords (Schauer 1971, 182) rather than to typologically earlier forms. The fragment in the Bronze Final III Giraumont hoard (List 157, 1) probably belongs to the Mâcon type, most common in south-eastern France (Cowen 1955, 104-106, Karte F) and related to the Ha B3 Kesselstadt type (Schauer 1971, 184 n.8, 185), though Thrane has proposed a Ha B1 date for the eponymous Mâcon sword (1968, 162 n.81). The Meulan sword (List 157, 3) is undiagnostic but should be another late Urnfield long sword.

Carp's Tongue swords. LIST 158. MAP 58.

A distinctive type of sword characterises hoards of Bronze Final III in north-western France. This is the so-called Carp's Tongue sword (Brewis 1922-23, 259; Jacob-Friesen 1968, 258, n.11) with a straight-sided blade, distinctly narrower for about one-third of its length towards the point; the

blade has a midrib flanked by grooves and bevelled edges. A deep ricasso is usual. Straight shoulders contain two or four rivet-holes or two slots; the grip is straight-sided with two or three rivet-holes or a slot. The pommel is usually broad and T-shaped. Flanges are indistinct or absent. Some examples may have more solid hilts and projecting finials, the Vénat group (Briard 1965, 203-205; Gaucher and Mohen 1972, 56; Cowen 1971, 154-155, fig. 1).

There is no complete list of Carp's Tongue swords, though Briard has provided a distribution map (1965, fig. 86; cf. Jacob-Friesen 1968, 261, n. 22). It is usually held that Carp's Tongue swords appeared in the lower Loire area where they developed out of Saint-Nazaire swords (Cowen 1956; 1971, 161; Jacob-Friesen 1968, 261) but they are also known from Iberia and the Mediterranean. Apart from swords of local Italian form with Carp's Tongue points, the Vulci type of eighth-century date (Bianco Peroni 1970, 94-95), there is a fragment in a hoard from Populonia, Tuscany (*ibid.*, 99 no. 270) and another in the hoard from Santa Marinella, Lazio (*ibid.*, 97 no. 269). The Populonia hoard is of later eighth-century date and its sword belongs to the form represented in the contemporary Monte Sa Idda hoard, Sardinia (*ibid.*, 99; Cowen 1971, 155-157, 164-165). The fragment in the Santa Marinella hoard can best be matched at Huelva (*ibid.*, 157, n. 1; Bianco Peroni 1970, 97) and the Italian hoard is dated to the mid ninth century (*ibid.*, 97; Müller-Karpe 1959, 65).

The large find, possibly a shipwreck, from the Ria de Huelva on the south-western coast of Spain (Inv. Arch. E1) provides the most important context for Carp's Tongue swords in the Iberian Peninsula (Almagro 1940; Savory 1949, 152-153, fig. 4). It contains fifty hilts, most with slotted shoulders; a concave ricasso form distinguishes these swords from French Carp's Tongue swords which have a more rectangular ricasso (Inv. Arch. E1, 1-50). The date currently accepted for the Huelva find is within the eighth century (Almagro 1957-58; 1974, 220; Jacob-Friesen 1968, 271; Hawkes 1969, 190; Hencken 1971, 72-74; Duval, Eluère and Mohen 1974, 35) though it was formerly given a later date (Hencken 1956, 134; Savory 1949, 141; Jacob-Friesen 1968, 270). An earlier date has been suggested by Schüle (1969, 81, 116) though Schubart has supported the conventional eighth-century date (1975, 88) by claiming as residual the Cypriot brooches (Inv. Arch. E1, 257-265; Cunisset-Carnot, Mohen and Nicolardot 1971). More detailed examination of Carp's Tongue swords of the Huelva group is desirable but the chronology of the Santa Marinella hoard gives an absolute date earlier than that provided by the conventional chronology for Carp's Tongue swords in north-western Europe.

In central Europe Carp's Tongue swords are found in Ha B3 contexts (Jockenhövel 1972, 105); there is an example, nearly complete though in several fragments, in the Saarlouis hoard, Kr. Saarlouis, Saarland (Kolling 1968, 72-73, Abb. 28, Taf. 49, 1), used by Müller-Karpe (1959, Abb. 62, 8) in his definition of Ha B3 in south-western Germany and Cowen (1955, 153 no. 11) records a small blade fragment in the contemporary-hoard from Hochstadt, Kr. Hanau, Hesse, (Hermann 1966, 204 no. 30; Schauer 1972a, Abb. 1, ? 14); Schauer appears to regard this as part of a solid-hilted sword blade (1971, 188 no. 565). There are several finds from Swiss Lake Villages:

Auvernier, Neuchâtel (Schauer 1971, 187 no. 554), Corcelettes, Vaud (*ibid.*, no. 559), and Morges, Vaud (*ibid.*, 188 no. 569), as well as isolated finds from St. Margarethen, St. Gallen (*ibid.*, no. 572), Yverdon, Vaud (*ibid.*, 189 no. 574), and Avenches, Vaud (Cowen 1955, 154 no. 16). Finds from northern Europe were listed by Cowen (1952, 145-146); at Wojciechowice, Prov. Kielce, Poland, a Carp's Tongue sword (*ibid.*, 146 no. 5) was probably associated with two other swords, one a Nordic MV antennae-pommel sword (Sprockhoff 1934, 106 no. 80).

Outside Brittany the largest group of Carp's Tongue swords is in north-eastern France (Briard 1965, fig. 85; List 158, 1-22) where they are most numerous in the Seine valley (Map 58). The Belgian finds (List 158, 24-27) are problematic, though Cowen accepts the example from Melle as genuine (1971, 158-159). The occurrence of three Carp's Tongue swords in the south-eastern Netherlands (List 158, 28-30), with the only find from the German lower Rhine area, near Wesel, Kr. Rees (Joachim 1973b, 263, Bild 1, 2), suggests that the Belgian swords should be accepted as genuine finds. The Carp's Tongue dagger from Boom, Antwerp (Cowen 1971, 157-159, 165 no. 1, fig. 3, 1, pl. IX, 7), its hilt related to the Monte Sa Idda form, is a little more dubious (Desittere 1973a 7 n. 1).

Carp's Tongue swords are characteristic of LBA3 hoards in south-eastern England (Burgess 1958a, 17, 38, fig. 14). The most northerly example is from Yorkshire (Bradshaw and Coombs n.d., 8) and the most westerly from the Lulworth hoard, Dorset (Drew 1935, pl. LXIX, 16). There are complete examples from Ely, Cambs. (Bradshaw and Coombs n.d., 8 n.8), the Thames at Kingston, Surrey (Devenish 1964, 4 no. 754, pl. II), and the Thames (Burgess 1968a, fig. 13, 1). Carp's Tongue swords are absent from the rest of the British Isles, though they might have influenced a few Irish swords (Eogan 1965, 16); this distribution suggests that the British examples were derived from north-eastern France, not from Brittany.

Ewart Park swords. LIST 159. MAP 59

The type of sword most widespread in the British Isles was defined by Cowen (1933) after two examples found together at Ewart Park, Wooler, Northumberland. This has a grip with flanges indistinct or absent, a trumpet-shaped tang, a slightly swollen grip with small rivet-holes, usually two or three, or a slot; straight shoulders with two or four rivet-holes and a slightly concave ricasso form a characteristic diamond shape; the blade has an ill-defined broad midrib and bevelled edges (Burgess 1968a, fig. 17, 1). Cowen has briefly drawn attention to the short, simple late Ewart type (1967, 412-413 n.1), quoting examples in the hoards from Thenford Hill, Northants (Inv. Arch. GB12, 1), Meldreth, Cambs. (Inv. Arch. GB13, 3), Hayne Wood, Saltwood, Kent (Osborne 1939, pl. XLVIII), and Cumberlow Green, Rushden, Herts. (Clark and Godwin 1940, pl. VII).

Cowen (1933, 195) claimed the Ewart Park sword as a highland zone type. It is indeed more widespread throughout Britain and Ireland than any other type of sword (Burgess 1968a, fig. 12; Eogan 1965, 10-13, cf. Burgess 1968a, 28 n. 96); mould fragments occur as far north as Jarlshof, Shetland (Hamilton 1956, 29, fig. 14, 3). However, Burgess' distribution map (1968a, fig. 12)

shows the major concentration of Ewart Park swords in the lower Thames valley, though production centres in Northumbria and eastern Scotland are suggested.

Ewart Park swords are eponymous for LBA3 throughout the British Isles (Burgess 1974, 209-211). They occur in French hoards of Bronze Final III, presumably in an approximate exchange for Carp's Tongue swords in Britain, but they are not numerous (Briard 1965, 205-208). Beside finds from north-eastern France (List 159, 1-5), Ewart Park swords occur in hoards from Auvers, Manche (Jacob-Friesen 1968, Abb. 1, 3), Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 3, 20, 24), Chedigny, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 6, 9), and Challans, Vendée (Eygun 1957), apparently fragments of an unfinished sword (Cordier 1976, fig. 5, 11). These and the hoards mentioned below usually contain shoulder fragments which may disguise typological variations such as those on swords of Thames type (see p. 241). There is a fragment of a Ewart Park sword in the Ha B3 hoard from Hochstadt, Kr. Hanau, Hesse (Schauer 1971, 188 no. 565; 1972a, Abb. 1, 11; Jockenhövel 1972, 105, Abb. 2, 2), and a fragment, without rivet-holes, from Corcelettes, Vaud (Schauer 1971, 187 no. 556). Beyond the Dutch finds (List 159, 6-8) there are fragments in the MV hoards from Hillwit, Kr. Sonderburg, Schleswig-Holstein (Cowen 1952, 145), and Helleved, Sønderborg Amt, Als (Inv. Arch. DK34, 2; Thrane 1975 51, fig. 24, b), considered by Thrane to be a re-export from northern Germany, though Ewart Park swords appear to be no more numerous there than in Denmark. Of the 'Proto-Hallstatt' swords listed by Schauer (1972a, 262-268) all but the examples in the Bexley Heath and Kirke Søby hoards certainly belong to the Ewart Park type or are too fragmentary for attribution to a variant.

Socketed swords. LIST 160

A small but distinctive group of swords with socketed hilts is known from Britain. These have short blades, c. 40 cm, leaf-shaped of simple pointed-oval section, usually with a ricasso. The hilt has a socket with rivet-holes and straight or slightly convex shoulders with a central notch; some examples have non-functional rivets or rivet-holes in the shoulders. The simplicity of the blades indicates a relationship with Ewart Park swords; only the Glamorgan blade (List 160, 2) has a more complex section.

Hoard finds belong to LBA3 (List 160, 1, 4-6, 9) and contemporary socketed knives of Dungiven type, with leaf-shaped blades and notched hilts, are probably the Irish equivalent of socketed swords (Hodges 1956, 38, fig. 4, 2; Brailsford 1947, 176 n. 5), the notch being derived from swords. Eogan dates Dungiven knives to the Dowris phase (1964, 296, fig. 12, 2), though no associated find is known. They also occur in Scotland (Coles 1959-60, 46, 86-87) and in north Wales (Burgess 1968a, 42 n. 65; Wheeler, fig. 51, 10) and their distribution is exclusive of that of socketed swords, except for one example from Hammersmith (Hodges 1956, 52 no. 1).

The form of the shoulders of socketed swords should be related to the swords with oval pommel (see p. 185). There is no proof that the terminal in the Grays Thurrock hoard (148) 24 is a pommel; the only pommel known attached to a socketed sword is the penannular bracelet re-used on the

Whittingham sword (List 160, 9). This bracelet, of massive round section and decorated with ring-and-dot motifs, belongs to Armstrong's type 3, which comprises mainly gold ornaments (Hawkes and Clarke 1963, 229, 242; Proudfoot 1955, 20-23, 37-39). The projections are unusual and Hawkes has suggested an Iberian origin as early as the eighth century (1971, 40-41). The re-use of the bracelet on the Whittingham sword may have been inspired by continental antennae-pommel swords (Cowen and Maryon 1935, 282, 288-289), though socketed swords themselves need reflect no more specific continental influence than the British swords with cast oval pommels.

Bag-shaped chapes. LIST 161. MAP 60

Small chapes with a convex base, defined by a bead, and a concave mouth, defined by a rib, are a characteristic LBA 3 form (Burgess 1968a, 38, fig. 13, 24; Eogan 1965, 169-170, Class 3). These small bag-shaped chapes are rare in Brittany; Briard (1965, 208) could quote only one associated find, in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 12-13, pl. 1, 9). Other examples from western France are in the Vénat hoard, Charente (Inv. Arch. F6, 21), and the Azay-le-Rideau hoard, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 6, 116). Finds from north-eastern France are more numerous (List 161, 13-17). Bag-shaped chapes are also known from Lake Villages (Evans 1881, 305), including Mörigen, Bern (Gross 1883, pl. XXV, 2). English finds (List 161, 1-9) are exclusively south-eastern but the two provenanced Irish finds (List 161, 10-11) appear to account for two of the three points in Ireland on Burgess' map of Carp's Tongue material (1968a, fig. 14). The four examples from Han (List 161, 18) are to be associated with Thames swords (see p. 245) of British origin, for Carp's Tongue swords are absent from Han. Eogan (1965, 170) has suggested that bag-shaped chapes were not confined to the scabbards of Carp's Tongue swords and their distribution suggests that they were a south-east English/north-east French type, not a north-west French Carp's Tongue type. It is possible that they were derived from short tongue-shaped chapes (Burgess, Coombs and Davies 1972, 219).

While most associated finds of bag-shaped chapes are of LBA 3 date there are possible later contexts. A fragmentary chape found with a Hallstatt bronze sword in barrow IV, Chavéria, Jura, has been interpreted as a bag-shaped chape (Vuailat 1977, 45, 120, fig. 17). The chape from Weert (List 161, 19) appears to have been found in the cemetery which has produced pottery transitional to Ha C (Desittere 1968, 132) as well as Hallstatt bronze swords (Cowen 1967, 439-440 nos. 140-142; Mariën 1958, 235), but the associations of the chape are unknown and could be Ha B. There are typologically developed chapes which appear to be intermediate between the small bag-shaped chapes of LBA 3 and Ha C chapes of Neuhaus type (see p. 249), one example comes from Court-Saint-Etienne, Brabant, unstratified (Mariën 1958, 184, fig. 10, 109), and another from Lough Gur, Co. Limerick (Eogan 1965, 174 no. 14, fig. 92).

The Déville hoard (173) 4 contains a terminal which is probably a chape, conical with a knobbed end. The contrast between this Lake Village form and Ha C chapes provides some support for the derivation of Ha C chapes from western bag-shaped chapes (Rieth 1942, 23-26, Abb. 15). The definition of

the base by a bead is a feature common to both groups. Eogan (1965, 170) has pointed out that this is only a typological sequence but if western influence on the origin of Hallstatt swords is admitted (see pp. 243-6) a similar influence on chapes would be rendered more likely.

Bourget arrowheads. LIST 162

Arrowheads of sheet bronze, triangular or barbed, with two perforations for attachment, are known as the Bourget type (Sandars 1957, 238-239, fig. 65, 4; Mercer 1970, 195-196, 212, fig. 6). They occur mainly in Lake Villages but spread north. Associated finds suggest that they were probably current during LBA3: Larnaud hoard, Jura (Chantre 1875, pl. XLIII, 1; Schauer 1975a, 56). There are three examples from settlement sites on the Marne, where they may have lasted into Ha C (Brisson and Hatt 1966, 171, fig. 2, 1-2; 1967, 19-24, fig. 33, 1). It is noteworthy that the more northerly finds are also from settlement sites (List 162).

VESSELS

Buckets

In a classic article (Hawkes and Smith 1957, 131-148) two insular vessels of sheet bronze were recognised as members of the continental Kurd type of bucket. The first is from Arthog, Merioneth (Savory 1976a, 51-52, pl. I, a; Hawkes and Smith 1957, 132-134, with the incorrect provenance, Nannau), and the second from the Dowris hoard, Co. Offaly (Eogan 1964, 299-300, 344 no. 58, fig. 13, left; Hawkes and Smith 1957, 134-137, with the provenance, Whigsborough). The Kurd type was defined by von Merhart (1952, 28-33, 69-70, Taf. 16-19). The early form, of Urnfield date, has a conical profile with rounded shoulder, everted neck and rolled rim; there may be two or three ribs on the shoulder. Two strap-handles spring from the shoulder to the inside of the neck; these may hold ring-handles. The base-plate is deep (*ibid.*, 29). The origin of the Kurd type is in the middle Danube region where most examples have been found (*ibid.*, 29-30, 69, Karte 5). The eponymous find should not be confused with another hoard from Kurd which contains ribbed pails and a situla (Stjernquist 1967, II, 41).

Neither von Merhart nor Hawkes and Smith discussed the chronology of the Urnfield buckets in great detail; the most relevant scheme, that of Mozsolics for the Late Bronze Age in Hungary, has not yet been elaborated in detail, but the more easterly finds appear to belong to the early Urnfield period. In Transylvania the hoards from Brincovenesti, Girbova, Gusterita and Iuoara de Sus all belong to Ha A (Rusu 1963, 187 n. 30, 207-208 nos. 12, 31, 66; von Brunn 1968, 291). Of the Hungarian finds, Kurd and Rinyaszent-király are Ha A1 (von Brunn 1968, 45, 60, 291) and Jáskarajenő is Ha A2 (*ibid.*, 292). The hoard from Bizovac, Croatia, is Ha A1 (*ibid.*, 290) and the hoard from Absberg-Bierbaum, Lower Austria, is Ha A (Müller-Karpe 1959, 103-104). German finds also begin in Ha A: Hart an der Alz, Ldkr. Altötting, Ha A1 (*ibid.*, 156, 160, Abb. 18, 3); Dresden-Dobritz, Saxony, Ha A2 (von Brunn 1968, 316 no. 53, Taf. 52, 2). There is a fragment in the Ha B3 hoard from Seeboden, Carinthia (Müller-Karpe 1959, 132, Taf. 145A, 1), and the finds from Škocijan, Slovenia, and Zürich-Wollishofen (von

Merhart 1952, 69) could also be of late Urnfield date. The only Italian find of Urnfield date is from Merlara, Venetia, equivalent to Ha A (Müller-Karpe 1959, 95, Abb. 26, 17). Most of these continental buckets are smaller than the insular buckets and have less well-defined shoulders. The best comparison for the Arthog bucket appears to be the more complete example in the early Urnfield Brincovenesti hoard (von Merhart 1952, Taf. 16, 5; Roska 1942, 167 no. 123, fig. 203). Another large bucket (Hawkes and Smith 1957, fig. 3, B) was found at Choryń, Prov. Poznań, Poland with part of a bronze amphora (Sprockhoff 1930a, 132, Taf. 28a) which should be related to the Ha B3/MV group recently studied by Jockenhövel (1974b, 23-36). The Škocijan buckets are also large (Hawkes and Smith 1957, 138 n. 6). The Brincovenesti buckets do not appear to have been associated with other types and their date might be later than that of other, smaller Kurd buckets from Transylvania.

It is difficult to date the Arthog and Dowris buckets precisely. The Irish example is typologically close to the Hallstatt form, with a less rounded shoulder, but its high base-plate indicates an Urnfield date (*ibid.*, 138); its context should be LBA3 (Eogan 1964, 344), though the Dowris find may not represent a single deposit (Coles 1971b). Two further buckets, from Derrymacash, Co. Armagh, and ? Leinster have bodies of continental Urnfield form and remains of strap-handles but bear secondary cast staples of insular origin (Hawkes and Smith 1957, 144-146). These imports were followed by an insular series of buckets, Irish-British, characterised by cast staples for the ring-handles, a feature probably derived from cauldrons (*ibid.*, 148, 164). All of the associated finds appear to be LBA3 (*ibid.*, 153-160): Dowris (Eogan 1964, 344 no. 58), Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 58), Meldreth, Cambs. (Inv. Arch. GB13, 4), Bagmoor, Lincs. (Inv. Arch. GB23, 1), Hatfield Broad Oak, Essex (Beaumont and Gould 1903, figs. 28-29, 32; Coombs 1974b, 264), Duddingston Loch, Midlothian (Coles 1959-60, 29, 117). This chronology combined with the typological priority of the cauldrons supports the hypothesis that cauldrons appeared in Britain during LBA2. It also contradicts von Merhart's suggestion that buckets appeared in Britain as a result of Ha C influence from the Low Countries (1952, 33; Hawkes and Smith 1957, 143-144), though von Merhart's view still has advocates (Kimmig 1962-63, 89-90; Desittere 1974a, 131). Hawkes and Smith suggest that the buckets were transmitted from the west Alpine Lake Village area (1957, 144) and this seems the most direct route. Regional preferences for sheet-bronze types were marked. Shields are known on the middle Danube and in Britain but not in west-central Europe and France, while sheet-bronze armour is known from France but absent from Britain (Schauer 1975b, Karte). Sheet-bronze cups, with which to drink the contents of larger vessels, are common in central and northern Europe, but absent from Britain where cast-bronze and ceramic cups were probably used (see p. 193, 285). While there are no LBA4 associations for buckets, the occurrence of a cauldron in the Sompting hoard (223) suggests that other sheet-bronze vessels could have been used during this phase, as does the Llyn Fawr hoard (218).

Bowls with cruciform handle-attachments. LIST 163

The handle-attachments in the Welby hoard (List 163, 1) could be from a bowl of group B1 or B2a which was probably made in east-central Europe

early in Ha B but not deposited in the hoard until LBA3. The complete bowl from Arzilliers, probably also deposited during LBA3, may also be of east-central European origin. The fragmentary sheet in the Adabrock hoard (List 163, 2) is probably from a bowl of group B2b which may be of Ha C east-Alpine origin but could be earlier.

These vessels do not appear to have been copied by insular bronze-workers.

Cast bronze vessels. LIST 164,

A small, heterogeneous group of cast-bronze vessels is known from Britain; datable associations are LBA 3. The well-known cup in the Welby hoard (List 164, 1) is unique among metal vessels and the handled cups in the Glentanar hoard (List 164, 3) also lack parallels in bronze; these vessels share a bi-conical profile and their dimensions across mouth and shoulder are similar.

The two other Scottish cups (List 164, 2, 4) are both badly miscast. They have been compared with the cup in the Ha B3 hoard from Bad Homburg, Ober-Taunuskreis, Hesse (Hermann 1966, 79, 204, Taf. 187, 22), and with vessels in the find from Ehingen-Burgfeld, Kr. Augsburg-West, Swabia (Behrens 1916, 25 no. 87, Abb. 8, b-c), by Coles (1959-60, 43 n. 5-6). Bronze cups occur in contemporary late Urnfield hoards from Wonsheim, Kr. Alzey (Behrens 1970, 40 no. 139, Abb. 15, 1-2), and Hanau-Dunlopogelände (Richter 1970, 159 no. 953), Hesse (Hermann 1966, 204), but these German vessels appear to be more sophisticated than the Scottish cups and are probably of sheet bronze.

The fragments of cast-bronze vessels from the Herstal (List 164, 5-6) cemetery do not come from datable burials; the cemetery as a whole is dated to Ha B/C (Alenus-Lecerf 1974, 44). There is a fragment, said to be of the rim of a bronze vessel, in the Gravelle hoard (174; Dubus 1912, 18, pl. IV, 40) but the nature of this fragment is uncertain; it may be from a Wallerfangen bracelet (see p. 207-8).

The British cast-bronze cups appear to reflect no specific continental influence; they should be related to fine ceramic cups (see p. 285).

HORSE-GEAR

Circular strap-crossings. LIST 165

The LBA3 hoards from Parc-y-Meirch and Welby and the contemporary assemblage from Heathery Burn Cave (List 165) all contain circular objects of low conical profile bearing ribbed ornament, with slots in the sides; the Heathery Burn Cave example has a closed back, the others are open.

These objects are conventionally identified as strap-crossings or strap-distributors, items of horse-gear. This is plausible, but the origin usually proposed for these strap-crossings is less so. In his original publication of the Welby hoard, Powell cited Hungarian and Czech finds as comparisons (1948, 34, 37-38), and, more recently, a Yugoslav find (1976, 9). Savory has concurred, characteristically emphasising French finds (1976a, 45). The Yugoslav find is a hoard from Adaševci, Srem, between the Danube and the Sava (Vinski 1955). This hoard contains much material of eastern origin, so-called 'Thraco-Cimmerian', including three discs of conical profile with a

peripheral rib and concentric ribbed ornament at the apex (*ibid.*, 30, Taf. 1, 3-5). These are referred to as Phaleren in the German summary; neither this text nor the photographs indicate their means of attachment, but the reconstruction drawing (*ibid.*, Bild 28) shows them over narrow straps, one over a single strap and another over the junction of two straps. None is shown as a strap-crossing. The comparisons cited by Vinski (*ibid.*, 33 n. 52-60) are mainly Hungarian and include those used by Powell in 1948. These comparisons are conical and convex discs with loop attachments (Gallus and Horváth 1939, pls. IX, 2, 3-9; X, 8; XIV, 4-5; XVII, 3-4; LI, 5; LXXX, 7). The Adăsevci discs are dated to Ha B-Ha C (Vinski 1955, 42; Kosović 1972, 15 n. 89) and the hoard belongs to a horizon at the beginning of Ha C (*ibid.*, 14-16). Savory (1976c, 45) has drawn attention to strap-crossings treated by Schüle (1969, 47, 191-195), Kossack (1954a, 158-160) and Bouzek (1974a, 158-159; 1974b, figs. 9-10) but neither the tubular cruciform strap-crossings nor the Ringfussknopfe are of the same construction as the British strap-crossing; the strap-crossing in the Isleham hoard (127) is not tubular and appears to be irrelevant to Schüle's list (1968, 194).

While the foregoing comparisons are useful for confirming that the British circular strap-crossings are items of horse-gear, I find suggestions of specific continental influence unconvincing; the origin of these LBA3 strap-crossings need be no more remote than the cruciform strap-crossings and the slotted rings in the Isleham (127) and Wilburton (129) hoards, notwithstanding any increase in the use of horses during LBA3 as a result of influence from late Urnfield Europe.

Bugle-shaped objects. LIST 166. MAP 61

These objects have a tubular or flat shaft with a broad loop below. When tubular the loop may be slotted; when flat it may have loops on the upper side or back (Burgess, Coombs and Davies 1972, 216-217; Burgess 1968a, fig. 13, 20-22). It is generally supposed that the function of these objects was to attach a strap through the broad loop while the shaft was attached to something else.

Apart from an isolated find in Frankfurt-am-Main museum (Jockenhövel 1972, 103, Abb. 1), all finds of bugle-shaped objects are from northern and western France and southern England, mostly in LBA3 hoards. French finds outnumber English (*ibid.*, 107, Abb. 3); additional examples from north-western France are in Bronze Final III hoards from Crapon en Planguenoual, Côtes-du-Nord (Briard, Le Roux and Omnée 1973, 45, fig. 5, 74), and 'Côtes-du-Nord' (*ibid.*, 57, fig. 10, 20). English finds of these one-piece bugle-shaped objects are mainly south-eastern (List 166, 1-12) though the examples from Broadward, Ham Hill and Roseberry Topping (List 166, 9-10, 12) are more widespread. This widespread distribution is reflected by two-piece bugle-shaped objects, of stouter form with a more rounded loop. Two complete examples are known (List 166, 17-18). The shafts of these two piece objects, often known as 'slotted reels', have slots between 2.5 and 3.0 cm long, more than half the total length of the shaft (List 166, 19-21) 3. This distinguishes them from the thinner objects with shorter slots in the hoards from, e.g. Isleham (127) 39 and Déville (173) 7, to which they have been

compared (Burgess 1968a, 37; Savory 1976a, 45; Jockenhövel 1972, 107 no. 8). Separate loops are less easy to identify but the pieces in the Green End Road and Horsehope hoards (List 166, 22-23) compare well in form, wear and dimensions with the loop of the complete two-piece object in the Parc-y-Meirch hoard (List 166, 18). I know of no complete two-piece bugle-shaped object from the continent, nor of any certain example of a separate shaft or loop.

Jockenhövel (1972, 107 no. 8) includes the Déville hoard (173) in his list of bugle-shaped objects, following Savory's reference (1948, 175) to Coutil's illustrations (1921, pl. 7, 18-19), but these drawings appear to represent the looped bar and slotted tube (Fig. 63A, 6-7) which appear on Coutil's photograph (1921, pl. II bis) which shows no true bugle-shaped object.

Parc-y-Meirch double rings. LIST 167

The Parc-y-Meirch hoard (List 167, 1) contains several fragments belonging to sets of two concentric hollow-cast rings of slightly oval form. The outer ring has a longitudinal slot into which fits a trapezoidal loop on the inner ring (Savory 1976a, fig. 9, 2). These objects, which I propose to name after the Parc-y-Meirch hoard, have been discussed by Clough (1972, 49-52). The inner rings have a maximum diameter of between 3.5 and 4.0 cm and the width of the base of the loop is between 2.0 and 2.4 cm; these inner rings are smaller than the loops of two-piece bugle-shaped objects and lack the worn area by the loop. Clough does not consider the Parc-y-Meirch find and considers the inner rings as 'looped guide rings' (1972, 50). Both Clough (*ibid.*, 51) and Savory (1976a, 45) cite objects in the Vénat hoard, Charente, as comparisons (Inv. Arch. F6, 107; George and Chauvet 1895, pls. XIX, 234; XXII, 268) but these are smaller in diameter, 2.0 and 2.3 cm, and different in dimensions, with larger central perforations. The proportions of the Vénat pieces can be matched by larger rings in a find from Mezónyk, Borsod county, northern Hungary, dated to the late seventh or early sixth century by Gallus and Horváth (1939, 72-74, 109-110, pl. LXVII, 8-9) and, apparently, to the mid sixth century by Párducz (1973, 36, 41). These bronze rings have iron loops.

Parc-y-Meirch double rings appear to be an insular type with a northerly distribution, related in construction, and probably in function, to two-piece bugle-shaped objects. Associated finds are LBA3 (List 167, 1, 4-6).

Rattle-pendants. LIST 168

In the Nordic area rattle-pendants occur mainly during MV, more rarely in MVI; their function is demonstrated by their attachment to horse-bits of Høve type (Thrane 1975, 122-123, 277, Fundliste 3, fig. 74). The MV hoard from Høve, Soro Amt, Zealand (Broholm 1946, 213-214 M127), contains two sets of horse-harness comprising bipartite bronze bits with ring terminals, each holding a circular cheek-piece with a T-shaped projection and a pair of rattle-pendants. The position of the pendants when the bit is in place may be seen clearly on a model in the hoard from Svartarp, Västergötland, Sweden (Thrane 1958, 224; Jacob-Friesen 1967, Taf. 181, 5). Nordic rattle-pendants were not always circular (Sprockhoff 1956, 258-262, Taf. 59).

Thrane has listed finds of rattle-pendants without bits (1975, 277-278, Fundliste 4, fig. 74) including several French finds, beside the two from the Paris area (List 168, 4-5). The Bronze Final III hoard from Chédigny, Indre-et-Loire, contains a pendant with torsion ornament on its grip (Cordier, Millotte and Riquet 1960, fig. 7, 11); the contemporary hoard from Choussy, Loir-et-Cher, contains a pendant with a plain loop in the plane of the pendant (Breuil and Bouillerot 1912, pl. V, 77); there is a fragment probably from a pendant in the Chamery hoard, Marne (Doize 1965b, pl. III, 72). A more complex set is included in the Plonéur-Lanvern hoard, Finistère (Briard 1965, 222, fig. 79). While it is possible that the British and Irish rattle-pendants (List 168, 1-3) may be direct Nordic exports (Herity and Eogan 1977, 214; O'Connor 1975, 224), the number of French finds has led Thrane (1958, 227; 1975, 235), Rynne (1962) and Savory (1971, 22-23; 1976a, 44) to propose a French origin. Whichever is the case, it is noteworthy that rattle-pendants should be absent from south-eastern England.

A sixth pendant from 'Ireland' (Rynne 1962, fig. 1) has a separate loop attached by conical rivets with long shafts; Thrane (1975, 123 n. 74) considers that this is a Luristan bronze, cf. a pendant associated with other horse-gear in grave 3 at Tepe Giyan, Iran (Contenau and Ghirshman 1935, 18, pl. V.6, pl. 8, Tombe 3, 12).

Bar toggles. LIST 169

In west-central Europe a form of bar toggle with a straight or slightly curved bar connected to a circular or oval ring by a short shaft occurs during Ha B3 and Ha C (Kossack 1954a, 157-158; Thrane 1975, 122, 278, Fundliste 5, fig. 74). The bar may be plain or decorated with transverse ribs. The ribbed form which occurs at Han (List 169, 4) appears to be of Lake Village origin (Sprockhoff 1956, 235; Vogt 1942, 198, Taf. 79, 21-22); there are two examples in the Ha B3 hoard from the region of Wiesbaden, Hesse (Hermann 1966, 204 no. 21, Taf. 193, 9-10), and another in the Bronze Final III hoard from Boissy-aux-Cailles, Seine-et-Marne (Nouel 1957, fig. 91, 8).

Nordic bar toggles of MIV and MV have smaller loops and less pronounced shafts than the late Urnfield form (Boudou 1960, 89-90). Raftery (1975) has summarised the evidence provided by the Nordic toggles in relation to the Irish finds (List 169, 2-3) which share traits of the MIV form with curved bar, an undecorated bar with expanded ends and the loop in the plain of the bar, with a straight bar, which is characteristic of MV toggles. Examples similar to the Irish finds occur, e.g. in the MV hoard from Lenzen, Kr. Westprignitz, Mecklenburg (Sprockhoff 1956, Abb. 71, 12). The triangular form of the Rathgall loop may be matched on the plain toggle in the Boissy-aux-Cailles hoard (Nouel 1957, fig. 90, 13).

The origin of the Irish toggles and of the probable toggle in the LBA 3 Thurloe Walk hoard (List 169, 1) is uncertain; they are not distinctive Urnfield forms, but neither are they definite Nordic exports. They are probably items of horse-gear, some Nordic examples are attached to rattle-pendants (Thrane 1975, fig. 73); they form part of the increased range of horse-gear current during LBA3.

The looped bar in the Déville hoard (173) 6 may be related to bar toggles.

Guevaux discs. LIST 170.

Lake Village sites and hoards of Ha B3 and MV have produced slightly convex discs of plain bronze 4.0-6.0 cm in diameter with a small central perforation. The 'Guevaux' discs have been discussed by Jockenhövel and Smolla (1975, 307) and Thrane (1975, 133, 278-279, Fundliste 9, figs. 74, 79). From the Lake Villages their distribution is mainly westerly through France, but examples are also known from south-west Germany and Denmark. Shafts are preserved on some examples (*ibid.*, fig. 8, g) but the use of Guevaux discs is uncertain; they are tentatively included here under horse-gear.

Phalerae. LIST 171

The standard treatment of Bronze Age phalerae is by von Merhart (1956); I have discussed the British examples myself (O'Connor 1975). It is usual to interpret the late Urnfield and Ha C phalerae of central Europe as items of horse-gear (*ibid.*, 223-224; Snodgrass 1973, 42-43) and I know of no convincing alternative for the late Urnfield phalerae discussed here.

Both of the sheet phalerae from the Thames are of Lake Village origin (List 171, 1-2); a LBA3 date is confirmed by the fragments in the Déville and Graille hoards (List 171, 6-7). The loops of these French phalerae are of late Urnfield form (von Merhart 1956, 29, Abb. A, 3, 5) and the form of the most complete Graille phalera appears to be related to a group with ribbed ornament found in Lake Villages and in hoards of Ha B3 and Bronze Final III on the middle Rhine and in eastern and central France (*ibid.*, 45, Abb. 7). Probably also of Lake Village origin are the Haulchin and Toome Bar phalerae (List 171, 3, 5). Dr. J. M. Coles kindly informs me that the Toome Bar phalera is in the Pitt-Rivers Museum, Farnham, Dorset, but the Irish part of this collection remains inaccessible. Seaby's catalogue (1890, 12 no. 181) records the sale of, "a circular boss, 8 3/4 in. in diameter, the outer edge ornamented with raised circles enclosing pellets, found in the Bann at Toome Bridge".

The Belgian phalerae (List 171, 8-9) are not certainly of Lake Village origin, though the peripheral bosses on the second example from Han could reflect Lake Village influence; their plain form resembles LBA2 phalerae (see p. 149) but their contexts could be LBA3.

Phalerae probably of LBA3 date occur in northern France, Belgium, Britain and Ireland; local and imported phalerae were common during MV in the Nordic area (Sprockhoff 1956, 263-269; Thrane 1975, 127-129). Phalerae demonstrate how widespread was horse-gear of central European origin or inspiration at this time.

Antler cheek-pieces. LIST 172. MAP 62

Antler cheek-pieces have recently been discussed by Britnell (1976). Lake Village finds are known and the British examples are usually referred to as 'late Urnfield'. To the list of British finds (*ibid.*, 31-32) should be added two from Runnymede Bridge, Egham, Surrey (Longley 1976, 13, fig. 2, a); this site and Heathery Burn Cave provide LBA 3 contexts. Continental finds (List 172) provide no more reliable evidence, though Saint-Pierre-en-

Chastre and Han could both be LBA3. Bronze cheek-pieces appeared in Britain during LBA2 (Britnell 1976, 30; see p.149) so some antler cheek-pieces may belong to this period, but most should reflect the increasing popularity of horse-gear during LBA3, and perhaps later. It is curious that no Irish find is known.

Convex-profile buttons and staples. LIST 173

These buttons are heterogeneous in date and in size but all examples will be discussed here.

Convex-profile buttons with bar loops vary in size. A distinctive group of very small examples, 0.5-0.8 cm in diameter, comes from Staple Howe and Court-Saint-Etienne (List 173, 3, 6). The Belgian buttons were corroded onto two objects, one of which was a Ha C phalera loop (List 244, 6), this suggests a LBA4 date for the Staple Howe buttons. The enlarged illustration of one of the Staple Howe buttons published by Brewster (1963, fig. 63, 2) has led to widespread, and strictly inaccurate, use of these buttons as comparisons for larger buttons. Another button from Court-Saint-Etienne, 1.1 cm diameter, is corroded onto a Ha C harness ornament (List 173, 9).

The bar-loop buttons in the LBA 3 hoards from Broadward, Déville, Saint-Roch, Port-Arthur and Hijken (List 173, 1, 4, 5, 12, 14) are between 1.6 and 3.4 cm in diameter. The context of the Egham buttons (List 173, 2) should be contemporary. The larger buttons, 3.5 and 4.7 cm, from Plantée des Dames and Morimoinne (List 173, 9-11) should be of Ha C date. The other buttons from Court-Saint-Etienne (List 173, 7-8) are unstratified, though the diameter of 8, 4.0 cm, relates it to the Ha C finds. The nature of the attachment of the convex-profile buttons from Han (List 173, 13) is uncertain, but finds from this site should be no later than LBA3. The button from Weert (List 173, 15), if from the cemetery, could be of late Ha B or Ha C date (Desittere 1968, 13; Cowen 1967, 439).

Convex profile buttons with curved loops are found in varying contexts: LBA2 at Isleham (List 173, 16), LBA3 at Déville and Drouwen (List 173, 17, 19) and Ha C at Morimoinne (List 173, 18).

Stapled buttons occur in two burials at Herstal (List 173, 20-21); the urn in burial 4 indicates a Ha B date (Alenus-Lecerf 1974, 36, 43), as does the bowl in burial 6 (*ibid.*, 39), and a fragment of a bracelet with a large everted terminal (List 199, 9) from this burial confirms a LBA 3 date. The staples from Oss (List 173, 22) are Ha C.

It seems unwise to place too much chronological weight on these buttons. Convex-profile stapled buttons are known from Ha A1 burials at Unterhaching, Ldkr. München, Bavaria (Müller-Karpe 1959, 153, Taf. 186C, 14; 186E, 3). Convex-profile buttons with straight or slightly curved loops occur in several Bronze Final III hoards from north-western France (Briard 1966a, 23-24, pl. 14, 121-122, 124-126, 128-129). Large numbers of very small, *c.* 0.3 cm, and larger, *c.* 1.0 cm, buttons and studs were attached to Ha C yokes (Drack 1958, 15-18, Abb. 9-13) and large bar-loop buttons, *c.* 2.4 cm, were used as strap ornaments (*ibid.*, 18, Abb. 14, 1-2). Convex-profile stapled buttons occur in Ha C burials with horse-gear (Kossack 1954a, Abb. 19A, 18; 21B, 13; 23A, 9-10; 25, 9; 26D, 2-3; 27, 5; 1970, Taf. 39, 67).

Conical looped buttons. LIST 174

Conical looped buttons occur in the LBA3 hoards from Plainseau and Saint-Roch (List 174, 2-3). The Choisy-au-Bac button (List 174, 1) is from the upper layer of a Hallstatt settlement site. The plain flange on the Plainseau button relates it to the convex-profile flanged buttons.

Convex-profile flanged buttons. LIST 175

These buttons are large with beaded rims and occur in two LBA 3 hoards (List 175). There is a related object in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 29, pl. 20, 250).

Ribbed buttons. LIST 176

Most of these buttons are closely similar in form and dimensions, circular with a broad loop, a thick rim and a broad central depression containing an annular rib and a central spike. Most are between 2.0 and 2.6 cm in diameter. They may be termed 'Llangwyllog buttons' after the hoard which contains most examples (List 176, 1); there are others in LBA 3 hoards from Reach Fen and Kensington (List 176, 3, 5), from the LBA3 site at Egham and the hillfort of Casterley Camp (List 176, 6-7). The Kensington button appears to be double size. Variant forms are known from Heathery Burn Cave and the Fortrie of Balnoon hoard (List 176, 2, 4).

Looped buttons and a Ha C Ringfussknöpf in a MVI hoard from Tremsbüttel, Kr. Stormarn, Schleswig (Hingst 1959, 47, Taf. 83, 5) bear similar ornament but need not be related.

Double-looped buttons. LIST 177

The ornament on the double-looped buttons in the Watford hoard (List 177, 1) relates them to Llangwyllog buttons and a similar double-looped button occurs in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 29, pl. 20, 248). The perforated double-looped button in the Welby hoard appears to be unique (List 177, 2).

Tanged studs. LIST 178

Tanged studs appeared during LBA 2 in the Isleham hoard (List 178, 2, 7) and in the contemporary Saint-Brieuc-des-Iffs hoard, Ille-et-Vilaine (Briard and Onnée 1972, 14, pl. XIV, 117). They occur in LBA 3 hoards from Addington, Déville (List 178, 3, 5) and Prairie de Mauves (Briard 1966a, 24, pl. 14, 123); the finds from Ivinghoe and Egham (List 178, 1, 4, 6) should be contemporary. The stud from Temse-Veldmolenivijk was unstratified; this cemetery includes pottery from Ha A to Ha D (Desittere 1968, 140-142). Ha C finds of tanged studs are known in southern Germany (Kossack 1954a, Abb. 19A, 16-17).

ORNAMENTS

Roll-headed pins. LIST 179. MAP 63

Pins with rolled heads were common throughout the Bronze Age (Audouze and Courtois 1970, 35-38; Carancini 1975, 7-9, 99-116; Laux 1976, 51-57, 96-97; Kubach 1977, 534-546, Taf. 131). They occur throughout the Urnfield period in the Neuweid Basin (Dohle 1970, 135), are a numerous component of the Villethierry hoard (Mordant and Prampart 1976, 110-122; see p. 122-3) and are common at Hallstatt (Peroni 1973, 16, 34, fig. 3, 7).

The hoard finds from Haulchin and Graville (List 179, 10, 12) are LBA3, mostly probably contemporary are the contexts at Ivinghoe, Heathery Burn Cave and Sinsin (List 179, 1-2, 16), while Fort-Harrouard, Saint-Pierre-en-Chastre and Han (List 179, 9, 11, 15) could be earlier but are unlikely to be later. The Valkenswaard burial (List 179, 17) was placed within an oval ring-ditch associated with a group of 'long beds' but only a general Late Bronze Age/Early Iron Age dating is possible (Brunsting and Verwers 1975, 61). The remaining finds cannot be dated more precisely (List 179, 3-8, 13-14). In lower Normandy there is a roll-headed pin from the éperon barré of La Brèche-au-Diable, Calvados (Edeine 1969).

Nail-headed pins. LIST 180. MAP 63

Nail-headed pins are a heterogeneous group, heads approximately circular, flat or slightly convex, usually with a slightly conical lower profile. The diameter of the head may be up to four times the diameter of the shaft; it is not always easy to distinguish between large nail-headed pins and small disc-headed pins. The same heterogeneity is apparent among épingles à tête en clou of Audouze and Courtois (1970, 29-30), dated from Bronze Final II to Ha C, and among nail-headed pins in Lower Saxony, where they occur early and late in the Bronze Age (Laux 1976, 62-63, 117-118). Nail-headed pins are known during Ha A in the Neuweid Basin (Dohle 1970, 132, Taf. 19, 30).

Hoard finds are unknown. Heathery Burn Cave (List 180, 4) shows a wide variety of forms in a LBA 3 context; the pins from Harrouard and Saint-Pierre-en-Chastre (List 180, 14, 16) no later. The Choisy-au-Bac pin is from a Hallstatt settlement site (List 180, 15). A LBA3 date is possible for the remaining British finds, only at Staple Howe (List 180, 12) is there Ha C metalwork, but the precise chronology of individual pins remains uncertain.

The pin in the MV burial from Wedderveen, Groningen (see p. 221), could belong to either the nail-headed or disc-headed group.

Vase-headed pins. LIST 181. MAP 64

Pins with large ribbed vase-shaped heads occur during Reinecke D and Ha A1 in central Europe (Kubach 1977, 387-388; Müller-Karpe 1959, Abb. 23, 7; 28, 4; 29, 2-3). Vase-headed pins are more common in late Urnfield contexts and it has been suggested that examples with larger heads are typologically early, Ha B2 (Müller-Karpe 1959, 163, Abb. 52, 10-12), and Mariën (1974, 227) has attributed the Han pin (List 181, 11) to this early

phase, but the validity of this division has been criticised (Dehn 1972, 53) and it may be regional rather than chronological (Kubach 1977, 517-518 n. 41). Most small vase-headed pins are of Ha B3/MV date (*ibid.*) but some examples, especially those with ribbed shafts, may be of Hallstatt date (*ibid.*, 518-520). This is a widespread type and a distribution map has been provided by Thrane (1975, fig. 103) who discusses Nordic MV finds (*ibid.*, 160-161). In Lower Saxony most examples belong to MV (Laux 1976, 101-110); in France the distribution of vase-headed pins is easterly and most are of Bronze Final III date (Audouze and Courtois 1970, 4054). In west-central Europe later finds are characteristic of Ha C (Kossack 1959, 48, Abb. 12A, 11).

The Fenny Bentley pin (List 181, 2) is not a characteristic vase-headed pin; its association with a hollow-bladed spearhead suggests a LBA 2 date (see p. 139, 153). Vase-headed pins are otherwise absent from hoards. Egham (List 181, 3) provides a LBA3 context and Fort-Harrouard, Saint-Pierre-en-Chastre, Paris, Grobbendonk and Posterholt pins all have decorated shafts (List 181, 6-7, 8, 12), a feature common in Hesse (Kubach 1977, 513); Kimmig has identified the Grobbendonk pin as a Lake Village product of late Ha B (1970, 48). Associations at Grobbendonk, Posterholt and Zittart (List 181, 9) all allow late Ha B dates (Desittere 1968, 32, 135; Roosens and Meex 1975, 17). Pottery associated with the Totternhoe pin (List 181, 1) has been given typological priority over the pottery from Ivinghoe Beacon (Matthews 1976, iii-iv; Hawkes 1940 figs. 2-3), which would render the dates proposed by Saunders (1971, 4) and Cunliffe (1974, 35) too late. While there is little evidence that any of our bronze vase-headed pins are later than LBA3, possible continuity of the form is shown by the three iron examples (List 181, 13-15).

Cup-headed pins. LIST 182. MAP 64

Cup-headed pins are characteristic of Ireland (Eogan 1974b, 98-100, 117) though their origin is obscure; Eogan tentatively suggests a derivation from central European Ha C forms via Nordic MVI pins (Baudou 1960, 83; Tackenberg 1971, 185-189). There appears to be little evidence for the occurrence of Ha C cup-headed pins (Kubach 1977, 529) in western Europe.

The pin the Point of Sleat hoard (List 182, 4) may be of Irish origin (Eogan 1974b 99; Coles 1959-60, 46), though Hawkes (1971, 41) has proposed an Iberian origin. The Sleat hoard need be no later than LBA3. Eogan regards the Heathery Burn Cave and Sion Reach pins (List 182, 1, 3) as distinct from Irish cup-headed pins (1974b, 99) and the Brigg pin should be related (List 182, 2). Heathery Burn Cave should provide a LBA3 context.

It is not certain whether the pin from Valthe was associated with the double-T-hilted knife (see p. 138) which would give a date of late LBA2 or early LBA3. This pin is unusual; the elaborate ornament on its shaft cannot be matched on cup-headed pins from Lower Saxony (Laux 1976, nos. 704-730).

Wart-headed pins. LIST 183

The wart-headed pin is a Nordic Late Bronze Age type. It may have a straight or a curved shaft. Examples with curved shafts are most common in Denmark, especially northern Jutland and northern Zealand, most are

MIV, a few MV. Straight-shafted wart-headed pins are rarer, most are from northern Germany, of MIV and MV date (Baudou 1960, 77-78, Taf. XVI, XXVA, 1-2, Karte 38). Several examples are known from Lower Saxony where their distribution is easterly with only one find west of the Weser; the only datable find here is NV (Laux 1976, 98-99, Taf. 51B).

The Sion Reach pin (List 183, 1) has a straight shaft so is presumably of north German origin, perhaps from the Elbe estuary. It is a rare example of a certain Nordic export in southern Britain. Its precise date is uncertain but LBA3 seems more probable than LBA2.

Convex-headed pins. LIST 184. MAP 64

Miscellaneous pins with convex heads of various forms are considered here. The only hoard finds are Fenny Bentley (List 184, 2), perhaps LBA2 because of its hollow-bladed spearhead, and Amiens area (List 184, 6), LBA3. The Fenny Bentley pin is similar in form to the Sinsin pin with a decorated head (List 184, 13); the pins from Fort-Harrouard and Tegelen also have decorated heads (List 184, 4, 15). These pins may be related to group J of Audouze and Courtois (1970, 24-28 nos. 162-166, 171-147); the Tegelen pin is plainer than the Ha B1 Eikopknadeln (Müller-Karpe 1959, Abb. 41, 13-15; 42, 1-3; Ruoff 1974, 27, Abb. 20; Kubach 1977, 490-502) to which Bloemers compares it (1975, 27-29), though Kubach (1977, 485) suggests that a comparable pin from the Rhine (*ibid.*, no. 1228) may be related to these Ha B1 pins. Kubach (*ibid.*, 500 n. 81) has compared the Sinsin pin to these Ha B1 pins alongside the pin from Saint-Vincent (List 184, 9) for which Mariën (1964, 152) cited Ha B comparisons. Most burials at Saint-Vincent are dated to Ha C, with a few early La Tène (*ibid.*, 159-160) but burial 29 is not discussed further. Desittere dates pit 5 at Lens-Saint-Servais (List 184, 8) to Ha B (1968, 145). The Herstal pin (List 184, 7) was an isolated find but most of the objects from this cemetery are Ha B (Alenus-Lecerf 1974, 43-44). The pins from Ivinghoe and Tan Hill (List 184, 1, 3) may be related; the bronzes at Ivinghoe suggest a LBA3 date and the claim for a Ha C date for the Tan Hill pin (Moore and Rowlands 1972, 65) seems speculative. The contexts at Saint-Pierre-en-Chastre and Han (List 184, 5, 11) are unlikely to be later than LBA3. The Zuidlaren burial (List 184, 14) may be as late as MVI (see p. 221-2).

Pins with small globular heads continued to Ha D in west-central Europe (Kossack 1959, Abb. 12B, 12) but only at Saint-Vincent is a certain Early Iron Age context provided and the decorated pins could be LBA2 rather than LBA3.

Biconical-headed pins. LIST 185. MAP 64

This is another heterogeneous group, heads vary in size and proportions, and shafts may be decorated. Biconical-headed pins occur from Bronze Final II to Ha C in south-eastern France (Audouze and Courtois 1970, 21-22) and in north-western Germany they are dated to MIV and MV (Laux 1976, 92-96; Tackenberg 1971, 191-197, Liste 106, Karte 42).

The only hoard find in Haulchin (List 185, 2), LBA3, and Saint-Pierre-en-Chastre (List 185, 3) is probably contemporary. Most of the remaining finds

come from Urnfield cemeteries in northern Belgium and the southern Netherlands (Map 65) and Desittere (1968, fig. V, 3) illustrates the pin from burial 42 at Best (List 185, 13) as characteristic of his north-western Urnfield group during Ha B. Burial 53 at Best is also dated to Ha B (*ibid.*, 120), like the Heibloem burial (List 185, 16), the Goirle burial (List 185, 15) and both burials (List 185, 17-18) from Riethoven (*ibid.*, 121, 122, 126). Desittere dates the Achelse Dijk find to Ha B (*ibid.*, 32) and the Neerpelt-Achel pins may be contemporary (*ibid.*) though this cemetery produced material of Ha C/D as well as Ha B (*ibid.*, 136). The Neerpelt-De Roosen pin (List 185, 11) was associated with a Kerbschnitt pot and this technique is not considered to have appeared in the lower Rhine area before Ha B1 though Lanting (1976, 60-61) suggests possible Ha A comparisons. Further south, Vaux-et-Borset (List 185, 9) has produced Early Iron Age pottery as well as earlier material, but Desittere dates the pin to Ha B (1968, 77). Burial 9 at Herstal contains an urn possibly of Ha C/D date (Alenus-Lecerf 1974, 36-39, 43) though the everted-terminal bracelet (List 199, 10) and the penannular gilded ring (List 211, 5) suggest an earlier date. To the west are the two pins from the Scheldt (List 185, 6-7).

While Desittere dates biconical-headed pins to Ha B, Kimmig (1970, 47-48) has emphasised that the pins themselves are not closely datable. The Best pins are undiagnostic, like the Goirle pin, and the Heibloem pin is not an Urnfield form; Kimmig considers that the pin from Riethoven burial 6 is an Eikopfnodel derivative and that the pin from burial 19 is Ha B.

Hollow globular-headed pins. LIST 186. MAP 65

Pins with hollow globular heads, usually decorated and perforated, appear in Switzerland during the early part of Ha B (Ruoff 1974, 27, 54, Abb. 22) though they are also known from later Ha B (Rychner 1974-75, 63 n.20). They are dated to Bronze Final IIIb in south-eastern France (Audouze and Courtois 1970, 33-34) and south German finds should belong to Ha B3 (Kubach 1977, 504-505). There is only a single Nordic find, in the MV hoard from Holzen-dorf, Kr. Wismar, Mecklenburg (Sprockhoff 1956, 233, Taf. 19, 20). Kubach (1977, 504-505 n. 22-23) confirms a LBA3 date for the Dreuil and north-eastern France pins (List 186, 1-2). The Dutch examples and the Han pin (List 186, 4-6) belong to his Ockstadt form (*ibid.*, 506 n. 34-35, 41) of Ha B3 date (*ibid.*, 507-508). The Ockstadt form is a middle-Rhine type (*ibid.*, 508, Taf. 107B) whereas the other hollow globular headed pins are of Lake Village origin (*ibid.*, 505).

Disc-headed pins

Disc-headed pins, as opposed to nail-headed pins, are rare in England outside Early Bronze Age contexts; the date of the example from Hagbourne Hill, Berks. (Harding 1972, 172, pl. 77, K), is uncertain. Disc-headed pins are more common in Ireland and have recently been studied by Eogan (1974b, 75-98). These pins may have a bent or straight shaft and the head is usually decorated. Associated finds are of the Dowris phase and show that straight and bent shafts were current at the same time (*ibid.*, 95). Eogan considers that pins with a small head bearing a central knob and concentric ribbed ornament were primary (*ibid.*, 84, 95, figs. 3, 19; 8, 76).

The best comparisons for these Irish pins are to be found in the Nordic area where disc-headed pins with a straight shaft belong to MIV and the transition to MV in Denmark and to MIV and MV in northern Germany (Baudou 1960, 78). The Scandinavian pins usually have a slightly convex head while the German pins often have a knob and concentric ribs (Tackenberg 1971, 204, 208). The ribbed pins were derived from central Europe and are dated to MV in northern Germany where they occur only east of the Weser (*ibid.*, 208-210, Liste 109-110; Laux 1976, 112-113, Taf. 52B). Pins with a bent shaft and disc-head with knob and rib ornament are the most common Danish type during MV, though they have earlier origins and last to MVI (Baudou 1960, 79, Taf. XVI, XXV B2b, Karte 40). Examples with decorated shafts predominate. In northern Germany disc-headed pins with bent shafts are known during MV but they are rare west of the Elbe (Tackenberg 1971, 210-211, Liste 112-113; Laux 1976, 113).

On most Irish 'sunflower' pins the shaft is bent at right angles, only exceptional examples have a recurved bend (Eogan 1974b, fig. 5, 25). The reverse is true of Scottish pins (Coles 1958-59, fig. 1) which mostly have the recurved bend, the so-called 'swan's-neck', derived from the German Schwan-enhalsnadel. Nordic swan's-neck pins may have cup-, ribbed, rolled or nail-heads; they appear during MVI in southern Scandinavia (Baudou 1960, 83-84) and at the same time in northern Germany, where they appear to be absent west of the Weser (Tackenberg 1971, 183, 185, 188, Liste 101, 103, 105b; Laux 1976, 128-132, Taf. 54B). It is important to note that these Nordic swan's-neck pins do not have disc or 'sunflower' heads and that their shafts have a double curve distinct from the single curve on the Scottish pins. Use of the term 'swan's-neck' seems inappropriate for the Scottish pins.

Scottish sunflower pins occur in three hoards: Orrock, Fife; Grosvenor Crescent, Edinburgh, Midlothian; Tarves, Aberdeenshire (Coles 1959-60, 52, 97-98, 109-110, 118-119). The penannular bracelets with terminals expanded all round in the Orrock hoard need be no later than LBA3 (see p. 213). The Grosvenor Crescent hoard contained seven Ewart Park swords, one with a bronze pommel (List 154, 5). The Tarves hoard contained a similar sword with a flanged and slotted hilt (List 154, 3) and a lozenge-section chape. These swords could be LBA3 (see p. 185-6) and Eogan has pointed out the Wilburton affinities of the Tarves hoard (1974b, 98). The pins in these hoards (Coles 1958-59, fig. 1, 1, 6, 8) appear to belong to Eogan's primary series (1974b, 83-84) with small boss and concentric ornament.

Irish disc-headed pins with straight shafts and Scottish and Irish pins with bent shafts should have been derived from Nordic MV pins and should have appeared during LBA3. The development of the more elaborate secondary series (Eogan 1974b, 97-97) could have taken place later. Coles (1958-59, 1) considered the iron swan's-neck pin from All Cannings Cross (List 250, 3) as primary, which excluded consideration of the MV pins and allowed only the iron pins of late Ha D and early La Tène in north-eastern Germany and western Poland as prototypes for the insular pins (*ibid.*, 2-3; Petersen 1929, 104-107; Hachmann 1960, 151). Iron pins and true swan's-neck pins will be discussed below (see p. 256-7). Despite Thrane's caution (1975, 234-235), disc-headed pins appear to represent Scandinavian influence on northern

Britain and Ireland; these areas share many features of disc-headed pins which are rare or absent in north-western Germany, the Low Countries, northern France and southern Britain.

Disc-headed pins with inset. LIST 187. MAP 65

Pins with insets in their head are known from French Lake Villages (Audouze and Courtois 1970, 56-57) but this does not appear to be a diagnostic form. The Isleham hoard (List 187, 2) suggests that it appeared during LBA2 and the Ty Mawr and Lulworth hoards (List 187, 1, 3) show that it was current during LBA3.

Knobbed disc-headed pins. LIST 188

The decorated pin from Sinsin (List 188, 3) may be compared to a pin in the Bronze Final III hoard from Drumettaz-Clarafond, Savoie (Audouze and Courtois 1970, 30-31, no. 315), an example in the Larnaud hoard, Jura (de Mortillet 1903, pl. XCIII, 1204), and another from the Saône valley (*ibid.*, 1205). The Sinsin pin was probably derived from south-eastern France, cf. the disc-headed pins in the LBA2 hoards (see p. 153).

Desittere (1963, 75) related the Court-Saint-Etienne pins to disc-headed pins of late Ha B in the Neuweid Basin (Dohle 1970, 133, Taf. 19, 32). Pins of Kleinenglis type of Ha B3 (Kubach 1977, 508-512) have broader heads than the Belgian pins (List 188, 1-2) which resemble some Irish disc-headed pins (Eogan 1974b, figs. 2, 8, 15-17; 3, 10, 20).

Pins with ribbed heads. LIST 189

Desittere (1968, 73) dates Biez burial 21 (List 189, 3) to early Ha B by comparison with burial 79 at Rheinberg, Kr. Moers, Rhineland, rejecting Kersten's suggestion that the Biez pin belongs to the vase-headed type (1948, 21). Jockenhövel (1971, 166) also suggests that both pins belong to the late Urnfield form with small vase-head; the ribbed ornament on the Rheinberg pin (Stampfuss 1939, 33, Abb. 30, Taf. 8, 6) may be related to that on Ha B3 vase-headed pins (Kubach 1977, 519-520) but more diagnostic are the razors from Biez (List 221, 12) and Rheinberg (Stampfuss 1939, Abb. 29, Taf. 8, 5) which belong to the LBA3 type with multiple ring handle and key-hole notch (see p. 219). Desittere (1968, 73) compares the Bergeijk pin (List 189, 6) to the Biez pin; Kimmig (1970, 48) cites eastern Urnfield comparisons for the pin and dates the pottery to late Ha B, denying specific Urnfield influence.

The two bone fragments from Temse-Veldmolenwijk (List 189, 5) are claimed as copies of the bronze pin (List 87, 2) from this cemetery (Desittere 1968, 66), which is related to the Reinecke D/Ha B Binningen type. A variety of bronze pins with narrow ribbed heads, which appear closer to the Temse bone pins, is known from Lower Saxony but in Ha C/D and early La Tène contexts (Laux 1976, 125-127).

The French pins (List 189, 1-2) are undiagnostic.

Pins with small globular heads and ribs. LIST 190

The Minnis Bay pin (List 190, 1) should be contemporary with the LBA3 hoard and the Saint-Pierre-en-Chastre pin (List 190, 3) is probably also LBA3. The precise date of the Fort-Harrouard pins is uncertain (List 190, 2).

Miscellaneous pins

Three continental settlement-sites have produced many pins which could be of LBA3 date. Most of the pins from Saint-Pierre-en-Chastre (171) are probably Bronze Final III (J.-Cl. Blanchet) though pyramidal-headed pins may have appeared during Bronze Final II (Millotte 1963, 120). Han (194) has produced even more pins, though types from all phases of the Late Bronze Age are represented. An even wider chronological range is probably represented among the pins from Fort-Harrouard and nail-headed pins were manufactured on this site. No British settlement-site has produced a comparable number of pins; Heathery Burn Cave, Co. Durham, with fourteen (Inv. Arch. GB55, 95-108) appears to have most and this may evoke a general comparison with Han. Sites around Brentford on the bank of the Thames appear to be rich in pins but none has been extensively investigated.

The large number of pins current in LBA3 reflects the increased popularity of ornaments at this time.

Homburg bracelets. LIST 191. MAP 66

Common in Hesse and characteristic of Ha B3 are penannular bracelets of Homburg type with transverse ribs alternately broad and narrow; other features vary, sections are usually solid but may be hollow, terminals can be plain, expanded or inverted (Richter 1970, 155-159).

Homburg bracelets also appear in Ha B3 in Bavaria and south-western Germany (Müller-Karpe 1959, 168, 179, Abb. 61, 20; 62, 6). These bracelets, or closely-related forms are common in eastern and central France in the Bronze Final III hoards from: Frouard, Meurthe-et-Moselle (Inv. Arch. F29, 24-27, 30-31), Xermaménil, Meurthe-et-Moselle (Inv. Arch. F30, 7-10), Basse-Yutz, Moselle, 1900 hoard (Inv. Arch. F32, 5), Choussy, Loir-et-Cher (Breuil and Bouillerot 1912, pl. III, 50), Petit-Villatte, Cher (de Goy 1895, pl. V, 8), and Boissy-aux-Cailles, Seine-et-Marne (Nouel 1957, fig. 91, 12; cf. the annular variants, fig. 91, 9, 11). There is an example from Brittany in the Menez-Tosta en Gouesnach hoard, Finistère (Briard and Giot 1958, pl. VI, 30). The examples from north-eastern France (List 191, 3-6) were presumably derived from the middle Rhine-Moselle area and the British examples (List 191, 1-2) represent an extension of this distribution. Nordic finds are known (Sprockhoff 1956, 198-199, Taf. 47, 2, 12; 48, 1; Thrane 1975, 167-168) from MV hoards and Thrane illustrates a Lake Village find (*ibid.*, fig. 109, e).

Balingen bracelets. LIST 192. MAP 66

Balingen bracelets are related to Homburg bracelets but distinguished by their ornament which consists of panels alternately of transverse lines and of broad and narrow ribs; fine detail may be obscured by wear (Richter

1970, 159-160). These bracelets belong to Ha B3 in Hesse (*ibid.*, 160), south-western Germany (Müller-Karpe 1959, 179, Abb. 62, 4) and in Switzerland (Ruoff 1974, 27, Taf. 38, 8; Rychner 1974-5, fig. 9, 5; 1976, 43 no. 49). Balingen bracelets occur in Bronze Final III hoards from Frouard, Meurthe-et-Moselle (Inv. Arch. F29, 28), Boissy-aux-Cailles, Seine-et-Marne (Nouel 1957, fig. 90, 7; cf. the annular variant, fig. 90, 10), Petit-Villatte, Cher (de Goy 1885, pl. V, 10), and Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 24, 285), as well as in the two hoards from north-eastern France (List 192, 2-3), whence the Minnis Bay example (List 192, 1) is probably derived. Examples are known from Danish MV hoards (Thrane 1975, 167, fig. 109, a, h). Though Balingen bracelets may have been of Lake Village inspiration, a middle Rhine-Moselle origin seems probable for the north-eastern French and English examples.

Bracelets with transverse ribbed ornament. LIST 193. MAP 66

Several LBA3 hoards from north-eastern France (List 193, 1-8) contain penannular bracelets with transverse ribbed ornament. Details of form vary but they should be related to similar bracelets in Ha B3 hoards from Hesse (Richter 1970, 161 nos. 982-984) and to contemporary Swiss bracelets with oblique ribs (Rychner 1974-75, fig. 9, 1-3; 1976, 43 no. 63). Similar bracelets occur elsewhere in France in the hoards from Chaméry, Marne (Doize 1965b, pl. III, 50), Choussy, Loir-et-Cher (Breuil and Bouillerot 1972, pl. II, 30-31), and Vénat, Charente (George and Chauvet 1895, pl. XIII, 117-118; Inv. Arch. F6, 87), and they are also known from Denmark (Thrane 1975, 167, fig. 109, f.)

These bracelets were probably of Lake Village inspiration but may have been produced in France.

Bracelets with transverse line ornament. LIST 194. MAP 66

This is a heterogeneous group; on worn examples the transverse lines may be the remains of ribs. The lines may be oblique. Hoard finds (List 194, 1-2, 4-8) are LBA3 and Saint-Pierre-en-Chastre should be contemporary (List 194, 3). Related bracelets occur in Bronze Final III hoards from Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 30, 347), and Saint-Genouph, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 11, 16, 18), and various bracelets with transverse and oblique line ornament occur in Ha B3 hoards from Hesse (Richter 1970, 161-163; 165).

These bracelets are probably French products.

Wallerfangen bracelets. LIST 195. MAP 67

The Ha B3 hoard from Wallerfangen (Vaudrevanges), Kr. Saarlouis, Saarland, contains fourteen penannular bracelets of thin omega-shaped section with slightly everted terminals (Kolling 1968, 197 no. 125, Taf. 47; Inv. Arch. F45-47, 13-26) which characterise a distinctive type of Ha B3 date (Richter 1970, 169).

Other German examples are in the hoards from Hanau, Hesse (*ibid.*, no. 1063), Saarlouis, Kr. Saarlouis, Saarland (Kolling 1968, Taf. 51, 3), and Lauterecken, Kr. Kusel, Pfalz (*ibid.*, Taf. 56, 1). The Lauterecken bracelet

has decoration which related it to the decorated C-section bracelets (see pp. below). There are nine Wallerfangen bracelets in the 1898 hoard from Basse-Yutz, Moselle (Inv. Arch. F37, 8-10), one in the 1900 hoard (Inv. Arch. F38, 10) and three in the hoard from Lay-Saint-Rémy, Meurthe-et-Moselle (Millotte 1965c, 90 no. 130, pl. VIII; Inv. Arch. F34, 3-4). These hoard finds indicate that the area of origin of Wallerfangen bracelets was Lorraine and the Saarland. Further west they occur in the hoards from Choussy, Loir-et-Cher (Breuil and Bouillerot 1912, 103-104, pl. III, 52), Petit-Villatte, Cher (de Goy 1885, 42, pl. IX, 1-1b), Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 5, 86), and Vénat, Charente (George and Chauvet 1895, 100, pls. XIV, 135-136; XXIV, 308).

The Wallerfangen bracelets from Stourmouth, Dreuil and Choisy-le-Roi (List 195, 1-2, 4) have ribbed terminals rather than the slightly everted terminals of Wallerfangen bracelets from Saarland and Lorraine. This form of terminal occurs on a fragment from the Mainz area (Richter 1970 no. 1062) and in the Choussy, Azay-le-Rideau and Vénat hoards. These bracelets appear to constitute a westerly variant produced in western or northern France but inspired from further east. The Wallerfangen bracelet in the MV hoard from Darsekau, Kr. Salzwedel, Altmark (Sprockhoff 1956, 209, Taf. 45, 11) belongs to the easterly form.

Decorated bracelets with C-shaped section. LIST 196. MAP 67

Richter (1970, 166-168) has defined a group of decorated bracelets with thin C-shaped section and everted terminals from Ha B3 hoards in Hesse. Other examples from western Germany are in the hoards from Wallstadt, Ldkr. Mannheim, Baden (Müller-Karpe 1959, Taf. 176A, 11), Brebach hoard II, Kr. Saarbrücken, Saarland (Kolling 1968, Taf. 41, 17), and Reinheim, Kr. St. Ingbert, Saarland (ibid., Taf. 63). In eastern France there is a pair in a burial from Herrlisheim, Haut-Rhin (Zumstein 1966, 129 no. 2299), and an example in the hoard from La Tuffière, Rolampont, Haute-Marne (Kimmig 1954, 215, fig. 94). To the west there is a related bracelet in the Petit-Villatte hoard, Cher (de Goy 1885, 39, pl. VI, 3), and fragments in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, pl. 22, 262, 264-265).

These bracelets probably represent a middle Rhine type intermediate between Wallerfangen bracelets and decorated Lake Village bracelets with hammered bodies (Ruoff 1974, 47-50, Abb. 18, Taf. 38, 10-11; Rychner 1974-75, 61, fig. 8; 1976, 43). The example in the Déville hoard (List 196, 2) has peripheral ribs, a feature probably derived from Wallerfangen bracelets. The Castle Dawson bracelet (List 196, 1) is a rare ornament to set beside the late Urnfield horse-gear of French origin found in Ireland. Individual examples may have been produced in France.

Massive decorated bracelets with C-shaped section and everted terminals. LIST 197. MAP 67

Among decorated bracelets with hollow section and everted terminals in Switzerland Rychner has recently distinguished those with massive cast bodies from those with hammered bodies (1974-75, 61, fig. 8, 4-6; 1976,

43 no. 62; Ruoff 1974, 47-50, Taf. 38, 1-2, 5-6). These massive bracelets have swollen, not straight-sided, bodies and larger terminals than the bracelets with hammered bodies; they belong to the Ha B3/Bronze Final IIIb phase.

These massive bracelets occur in the French Alps (Courtois 1960, 101-105, figs. 48, 50) and in hoards in western France from Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 5, 58), Saint-Genouph, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 11, 15, 17), and Vénat, Charente (George and Chauvet 1895, 101, figs. 3-4; Inv. Arch. F6, 63, 69).

There are two examples of these bracelets from Britain, the first from a LBA3 hoard (List 197, 1), the second with a more uncertain provenance (List 197, 2); this Lake Village type appears to be absent from north-eastern France. Hawkes derives the two gold bracelets with broad, convex section and large everted terminals in the Tisbury hoard, Wilts., from the Shoebury/Great Wakering bracelet (Hawkes and Clarke 1963, 233, pl. XI, 1-2); no other type with large everted terminals has such a broad body except the Dutch omega bracelets (see below) but none of that type is known in Britain. The gold bracelet with everted terminals in the Walderslade hoard, Kent (Longworth 1966-67), may also be related to the Lake Village bracelets.

Odoorn bracelets. LIST 198. MAP 67

The denomination 'Odoorn type' is used by Butler (1965, 198). The eponymous bracelet (List 198, 2) has a D-section and slightly expanded terminal backed by groups of grooves; there are three other groups spaced around the body separating into four sections the row of double pointillé lines along each edge. The Onstwedder Holte bracelets (List 198, 3) are decorated and slightly more massive, the bracelets in the Hijken hoard (List 198, 1) are undecorated. The Onstwedder Holte bracelets can be matched by a pair in the MV hoard from Ostrhauderfehn, Kr. Leer, just across the border in German Friesland (Sprockhoff 1956, 50, 209 no. 18, Abb. 53, 1). The pointillé ornament is repeated on one of the gold bracelets from Hijkersmilde, Drenthe (Butler and van der Waals 1960, 93, Fig. 42, right, pl. XIII).

There is a small group of bracelets from northern Germany with D-section and expanded terminals backed by lines (Sprockhoff 1956, 208 no. 11, Taf. 41, 5) and a more widespread group of MIV and MV bracelets with D-section and everted terminals (Baudou 1960, 65-66, Taf. XIII, XIX D 1a). Odoorn bracelets may represent the western edge of this Nordic distribution. Odoorn ornament appears on a bracelet with large everted terminals from Merfeld, Kr. Coesfeld, Westphalia (see p. 210-11).

North Dutch omega bracelets. MAP 67

Butler (1965) has described a group of bracelets characteristic of the northern Netherlands. They have broad bodies, often swollen, with flat, pointed-oval or slightly convex sections and everted terminals; they may be undecorated or bear longitudinal or transverse ribbed ornament. They are found in four LBA 3 hoards: Drouwen (201), Hijken (203), Bruggelen (205) and Elzen (211); their distribution is coincident with that of other north Dutch types, single-edged socketed knives (Map 55) and socketed axes, especially those with dog-tooth ornament (Butler 1965, fig. 15). North Dutch omega

bracelets are not a Nordic type but related to central and west European bracelets of the late Urnfield period with large everted terminals (*ibid.*, 168-169).

Lyzel bracelets. LIST 199. MAP 68

These bracelets with large everted terminals have a solid body, usually of round section, often decorated; they may be named the Lyzel type after this hoard (List 199, 3) which contains six examples. The north-eastern French finds are all in LBA3 hoards (List 199, 2-5); the only other French find known to me is in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, pl. 27, 312). There are also several Belgian examples (List 199, 6-11). The Schoonaarde bracelet (List 199, 7) is related to hollow-section Belgian bracelets by its ribs (see below) and Lyzel bracelets may have been produced in Belgium as well as north-eastern France, but they appear to represent the French equivalent of the hollow Belgian bracelets with everted terminals. The Belgian finds provide little dating evidence; they should be LBA3 though the urn in burial 9 at Herstal (List 199, 10) may be of Ha C date (Alenus-Lecerf 1974, 36, 43). The Minnis Bay hoard (List 199, 1) confirms a LBA3 date.

C-section bracelets with large everted terminals. LIST 200. MAP 68

The hoards from Vénat, Charente (George and Chauvet 1895, pl. XIV, 133), Graville and Dreuil (List 200, 2-3) contain bracelets with C-shaped section and large everted terminals. The Vénat bracelet and one Dreuil bracelet have peripheral ribs, perhaps derived from Wallerfangen bracelets (see p. 207-8); the Vénat bracelet and the Graville bracelet have ribs by the terminals, cf. hollow-section bracelets (see below), and the second Dreuil bracelet has incised ornament, cf. the decorated bracelets with smaller everted terminals (see p. 208-9). The smaller examples in the Lyzel and Bonneville hoards (List 200, 1, 4) are probably related to the Lyzel type. This small, heterogeneous group represents production in north-eastern France influenced by various other LBA3 forms of bracelets with everted terminals. A bracelet in the MV hoard from Warnow, Kr. Usedom, Wollin island, Pomerania (Warnowo, Wolin, Prov. Szczecin), is probably related (Sprockhoff 1956, 192, Taf. 48, 4).

Hollow-section bracelets with large everted terminals. LIST 201. MAP 68

Mariën (1950) has discussed a group of bracelets from Belgium; they have large, oval, everted terminals and hollow-cast bodies, usually of oval section, the terminals are often backed by ribs. The Belgian finds are in the hoards from Port-Arthur, Zandbergen, Spiennes and Jemeppe (List 201, 3-6), while French finds occur in the hoards from Graville, Plainseau (List 201, 1-2), Petit-Villatte, Cher (de Goy 1885, 41, pl. VI, 6-7), and Vénat, Charente (George and Chauvet 1895, pls. XIII, 116; XXIV, 312). There are finds in two Ha B3 hoards from Hesse: Ockstadt and Gambach, Kr. Friedburg (Richter 1970, 166 nos. 1046-1048); the Gambach bracelet has bands of ornament and terminals cast together like the Jemeppe bracelets (List 201, 6).

A bracelet from Merfeld, Kr. Coesfeld, Westphalia (Aschemeyer 1966, 14-15, 68, Taf. 34, 7) may be related, though it appears to have a solid

section. Its swollen body and large everted terminal resembles the Belgian group, but its ornament, bands of transverse lines and pointillé along the edges, is reminiscent of that on Odoorn bracelets (see p. 209).

Though Mariën is cautious about establishing the origin of these bracelets (1950, 67) it appears that they were most characteristic of Belgium, complementing the Lyzel type of north-eastern France, though some may have been manufactured elsewhere. We may agree with Mariën's derivation of these bracelets from Lake Village forms (*ibid.*, 67-68).

Hollow-cast bracelets with plain terminals in the Plainseau and Spiennes hoards (List 202), as well as the pair of hollow-cast bracelets with ribbed terminals in the Dreuil hoard (177; Breuil 1907, fig. 8, 35), were probably produced in the same workshops as the hollow-cast bracelets with everted terminals.

The fragment of a hollow-section bracelet in the Lille Museum hoard (227) should belong to this group.

Bracelets with disc terminals. LIST 203, MAP 69

These bracelets have a solid, narrow, round-section body with well-defined disc-shaped terminals attached centrally. Beside the three examples from north-eastern France (List 203, 2-4), they occur in the Bronze Final III hoards from Choussy, Loir-et-Cher (Breuil and Bouillerot 1912, pl. II, 27), and Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 30, 346). The example in the Stourmouth hoard (List 203, 1) is probably of north-eastern French origin.

Bracelets with rolled terminals. LIST 204. MAP 69

Bronze bracelets with flat section and rolled terminals occur in three LBA3 hoards from north-eastern France (List 204) and in the Vénat hoard, Charente (George and Chauvet 1895, 100, pl. XIV, 127-129), and the Petit-Villatte hoard, Cher (de Goy 1885, pl. VI, 4). Jockenhövel and Smolla (1975, 306, 310, fig. 9A) suggest that these bracelets belong to the Carp's Tongue complex and that they influenced the production of insular gold bracelets with rolled terminals. Bronze bracelets with rolled terminals are not a Breton Carp's Tongue type, but appear to be of north-eastern or western French origin. Gold bracelets with rolled terminals occur in four English hoards: Morvah, Cornwall, Tisbury, Wilts., Bexley, Kent, and Cottingham, Yorks. (Hawkes and Clarke 1963, 231-234, figs. 53-54, pl. X), and, rarely, in Ireland (Eogan 1964, 306, fig. 15, 15). The bronze bracelets provide an obvious inspiration, but none is yet known from Britain.

Bracelets with ring terminals. LISTS 205-206. MAP 69

Bracelets with ring terminals have been briefly discussed by Jockenhövel and Smolla (1975, 306, 310, fig. 9B). There are two distinct varieties, the first with convex-profile body and broad, oval ring, the second with angular-profile body bearing incised ornament and separated from the ring by a transverse ridge. The first variant is most numerous and may be named the Thiais type after the hoard (List 205, 6) which contains six examples;

this type may have been a product of the Paris area, for the Bonneville hoard (List 205, 7) contains two or three examples. There are four other finds from north-eastern France (List 205, 2-5) and other examples in the Chaméry hoard, Marne (Doize 1965b, pl. III, 52-53), the Kergal en Guidel hoard, Morbihan (Marsille 1921, 84 no. 1406, pl. IX, 3), and the Vénat hoard, Charente (George and Chauvet 1895, 100, pls. XIV, 130; XXIII, 303). The fragment in the Grays Thurrock hoard (List 205, 1) should be of north-eastern French origin. The second variant occurs in the Reach Fen and Dreuil hoards (List 206) and plainer examples with a transverse rib occur in the hoards from Chaméry (Doize 1965b, 536, pl. III, 54-55) and Vénat (George and Chauvet 1895, pl. XXIII, 303). Miscellaneous bracelets with ring terminals occur in the Dreuil (177) and Bonneville (183) hoards.

We may agree with Jockenhövel and Smolla (1975, 306) that ring-terminal bracelets are characteristic of LBA3 but they are not an élément neuf du complexe des épées en langue de carpe, but a product of north-eastern France which spread to western France and southern England.

Recurved bracelets. LIST 207

Though not a new form (Richter 1970, 129-131), bracelets of recurved slender rod occur in Bronze Final III hoards in north-eastern France. The examples in the Dreuil (List 207, 3) and Vénat (George and Chauvet 1895, 96-97, pl. XII, 100; Inv. Arch. F6, 60) hoards have cast twisted ornament. Lake Village (George and Chauvet 1895, 97) and other French examples (Déchelette 1910, 312, fig. 120, 1) are known. The British examples are both plain (List 207, 1-2) but probably represent continental influence.

Covesea bracelets

Scottish bracelets with terminals expanded outwards were first discussed by Benton in her publication of the Covesea bracelets which became eponymous; she suggested a west-Alpine origin for these and other bracelets with expanded terminals (1930-31, 182-184). Proudfoot later distinguished between Covesea bracelets with simple expanded terminals, his type 2, and those with additional transverse ridges, his type 2a; he also favoured a late Urnfield origin in the western Alps (1955, 15-20, 34-36). However, Proudfoot's list includes under Covesea bracelets forms which really belong to other types and all his continental examples should be removed together with those from Longy and Minnis Bay and the gold bracelet from Cottingham. A more accurate list is provided by Hawkes and Clarke (1963, 242-246). Coles also cites a variety of central European and Nordic bracelet types and he suggests an origin in the "north-west European area" of the Low Countries and northern Germany (1959-60, 39-41, 89-90), i. e. Belgian bracelets with large everted terminals, Odoorn bracelets, Urnfield ribbed bracelets and north German bracelets. Hawkes supported Coles and emphasised that Covesea bracelets from eastern Scotland, usually bronze, contrasted with the gold bracelets of the same form more common in the west of Scotland and lowland Britain (Hawkes and Clarke 1963, 235-236).

Penannular bracelets were popular throughout central, western and northern Europe towards the end of the Bronze Age; in Britain, northern

France and the Low Countries bronze bracelets were common during LBA3 where they had been rare during LBA2. I have discussed above the various diagnostic types produced in France, Belgium and the Netherlands with those imported from central Europe; lowland Britain appears to have produced no diagnostic bronze bracelet type. It is reasonable to agree with Hawkes that Covesea bracelets were a poor version of Irish gold bracelets, but is it necessary to see Covesea bracelets as intrusive and characteristic of a 'culture' in eastern Scotland reflecting continental influence?

There is no illustrated corpus of Covesea bracelets and such an enterprise is desirable. My own illustrations (Figs. 55A-B, D-E) show the variety of forms; all are penannular with solid section, round or with flattened sides; terminals may be tapered, expanded outwards or slightly everted, with or without ridges. The larger examples with flat sides and everted terminals, e.g. Braes of Gight and Auchtertyre (Figs. 55A, 1; 55D, 1), are reminiscent of plain Homburg/Balingen derivatives, but certainly not of any form with large everted terminals. Everted terminals and ridges occur on bracelets in Breton Carp's Tongue hoards (Briard 1966a, pls. 29, 31). If continental influence is to be invoked for these Covesea bracelets, it should have been transmitted via northern France and southern Britain. The expanded terminals and tapering terminals are not easy to match on the continent, certainly not in the Urnfield or Nordic areas (Sprockhoff 1956, 206-209; Baudou 1960, 62-67). If they are a poor version of Irish gold bracelets, could they not be derived from Irish forms. The typological difference between Irish bracelets with evenly-expanded terminals (Eogan 1964, 304, fig. 15, 11) and Covesea bracelets with terminals expanded outwards is much less than that between Covesea bracelets and the various Urnfield and Nordic types with which they have been compared to support the derivation of the Covesea type from continental bracelets with everted terminals. In the region suggested by Coles (1959-60, 41 n. 5) only Odoorn bracelets bear much resemblance to Covesea bracelets and the Dutch type is less numerous. Covesea bracelets probably combine elements from Irish gold bracelets and late Urnfield bronze bracelets via northern France and southern England, cf. the possible French origin of the neck-rings in the Braes of Gight hoard (144), but any continental influence is diluted. They do not represent "settlers from the north-west German plain" (*ibid.*, 54).

Miscellaneous bracelets. LIST 208

The Dorset bracelet (List 208, 1) has pontillé ornament which may relate it to the Odoorn type, though its motif is more complex. The terminals resemble the Odoorn form, but can also be matched on more massive Covesea bracelets. The Dorchester bracelet (List 208, 2) resembles the eponymous Odoorn bracelet in form and ornament but may also be a Covesea variant.

Burgess (1976b, 101) has compared the Streeton-on-the-Fosse bracelets (List 208, 3) to the series from the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, pl. 27-31), but these have terminals somewhat expanded, whereas the terminals of the English bracelets appear merely to be notched. They do not appear to belong to any diagnostic group of Iron Age bracelets (Stead 1965, 49-54; Wainwright 1967, 39-40, 83-85). A Late Bronze Age date cannot be excluded, but remains unproven.

The Tourville-la-Rivière bracelets (List 208, 4) appear to be related to a group of bracelets found in the Massif Central, similar in form and ornament, though usually with angular section (Daugas 1972, figs. 1, 4-6). The decoration on the Tourville bracelets is of Daugas' type 1 (*ibid.*, 178). These bracelets belong to the Launacien phase at the transition between Bronze Final IIIb and Ha C (*ibid.*, 182).

Lyzel pendants. LIST 209 MAP 70

A group of hoards from north-eastern France and Belgium has produced objects which I intend to call Lyzel pendants. These are of cast bronze, in the form of a little more than half a circle, with a central boss and a transverse tubular attachment. They may be plain or bear notched ornament; the examples from Han (List 209, 6) are variants with peripheral ribs. The ends of the attachments are usually bevelled as if the pendants hung on a strand to form a necklace. This assumption is supported by the presence of pendants from two sets in the Lyzel hoard (List 209, 1).

Whe Mariën discussed Lyzel pendants (1950, 45-46) he referred to Iberian Iron Age necklaces with similar pendants but the distribution of Lyzel pendants is restricted to north-eastern France and Belgium with the exception of an example in the Vénat hoard, Charente (Inv. Arch. F6, 111). They were presumably produced in conjunction with bracelets with large everted terminals. The origin of Lyzel pendants may be sought in the gold pendants from Han (Mariën and Vanhaeke 1965, pls. 9-10). Pendants of similar form occur on necklaces from Kr. Kreuznach (? Waldalgesheim) in the Hunsrück (Mariën 1968-70, 22, fig. 4) and in the female burial 2 of the rich double burial of Ha A2 at Wollmesheim, Kr. Landau, Pfalz (Müller-Karpe 1959, 176, 314; Krahe 1960, Abb. 2, 78; Mariën 1968-70, 22-25; Schauer 1971, 168-169). Hoard finds of Lyzel pendants indicate a LBA 3 date, though the peripheral rings on the Han pendants are reminiscent of Ha C tutuli (Kossack 1954a, 161, Liste C to Karte 3).

Urnfield pendants. LIST 210. MAP 70

Pendants of various forms were common in west-central Europe during the late Urnfield period but few reached the west. The form most often found in western Europe is penannular or razor-shaped (List 210, 2, 4, 9, 10), predominantly Ha B3 (Kossack 1954b, 76, 84; Jacob-Friesen 1969, 149-150, 158, Abb. 7; Jockenhövel 1971, 156-157; Thrane 1975, 126). Annular, triangular and wheel-shaped pendants were contemporary; a few annular pendants lasted to Ha C (Kossack 1954b, 76; Kubach 1977, 507 n. 49).

Rich sets of ornaments like that from La Loubière, Bénévent-en-Champsaur, Hautes-Alpes (Courtois 1960, fig. 30), show the variety of pendants current during Bronze Final IIIb in south-eastern France; to the north-west, elements of such sets occur in the Carp's Tongue hoards from Amboise, Indre-et-Loire (Cordier, Millotte and Riquet 1960, figs. 3, 16-18; 4, 36, 40-43), and Notre-Dame-de-Livoye, Manche (Briard 1965, fig. 79, 2). The pendants from north-eastern France, the Low Countries and England could be of west-Alpine origin though some forms also occur on the middle Rhine (Kubach 1977, 507, n. 49). The dagger-shaped pendants from Paris

(List 210, 6, 8) are dated to Bronze Final III by hoards in south-eastern France (Audouze 1976, 100-106, fig. 15) and the triangular pendants from Saint-Pierre-en-Chastre are probably contemporary, though this form also occurs during Ha C (*ibid.*, 106-107).

Penannular gilded rings. LIST 211. MAP 71

These are small penannular rings of base metal, usually copper, covered with gold sheet. The origins of the continental finds, from Belgium and the southern Netherlands (List 211, 4-9), must be sought in Ireland where penannular rings of Armstrong's fifth class are usually of solid gold, but sometimes gilded (1920, 34-35, 79-84, pl. XIV, 175-232). Fifteen of the fifty-nine examples listed have a base-metal core, but only one in Dublin has a provenance, Edenordinary, Dromore, Co. Down (*ibid.*, 82 no. 299); there is a provenanced example in Oxford from Ballyboley, Co. Antrim (Ash 1927, 1949). Early work suggested that their weights might have been graduated, thus the term 'ring-money'. Armstrong also proposed that they were hair-rings and was followed by Childe (1935, 163), who cited traces of hair or string on examples from Covesea (Benton 1930-31, 182), and by Hawkes (1961b, 453-454), who proposed derivation from Egyptian wig-rings. This prompted Eogan to date their appearance to the Dowris phase (1964, 272), though he records only one hoard, from Tooradoo, Co. Limerick, dated to the Dowris phase despite a comparative lack of diagnostic objects (*ibid.*, 342 no. 50). An old record of a find of several gold rings with a gold dress-fastener may support a Dowris date (Herity 1969, 9, pl. VIIb; Megaw 1975, 24-25).

Coles lists eighteen penannular gilded rings from Scotland (1959-60, 43 n. 9, 91) where solid gold rings appear to be absent. Associated finds in the Balmashanner hoard (145) and at Covesea indicate a LBA3 date. Finds of gold rings are more common in southern England (List 212) than gilded rings (List 211, 1-3) but provide a link between Ireland and the Low Countries.

There are several associated finds from the Low Countries but their chronology is debatable. At Borsbeek (List 211, 4) the handled cup from Burial 10 is said to be Ha C, but could be earlier (van Impe 1972, 23). The urn in Herstal burial 9 (List 211, 5) is dated to Ha C (Alenus-Lecerf 1974, 36-39, 43) but the everted-shaped urn from burial 34 at Kneghel (List 211, 9) appears to be a devolved form which could be of Ha C date in the north-western group (Desittere 1968, 45, figs. 71, 2; 73, 5), though similar forms are dated to Ha B in the Flemish group (*ibid.*, 68, fig. 81, 5). The date of the Marche-les-Dames burial (List 211, 8) is uncertain, an associated pin appears to be undiagnostic. A date later than LBA3 for the examples from Han (List 211, 7) is unlikely.

Penannular gilded rings were current during LBA3 and may have persisted into Ha C. All the continental burials with gilded rings contain other bronzes, also gold at Borsbeek (List 211, 4). These are rich burials by local standards and Han (194) is also a rich site. This reflects the poverty of metal objects in the Low Countries compared with southern England and Ireland. These rings must have been personal ornaments but none is known from any of the probable or possible British Late Bronze Age burials recorded by Burgess (1976b, 83-93, 101).

Beads. LIST 213. MAP 72

A variety of bronze beads appears in Bronze Final III hoards from north-eastern France and in contemporary Belgian and Dutch finds. Biconical beads (List 213, 1-4) are most numerous in the Lyzel hoard; the example in the Minnis Bay hoard is probably of north-eastern French origin. Convex-profile beads occur in six hoards; (List 213, 5-10); the ribbed examples in the Plains-eau hoard appear to constitute a specific local form. Spiral beads are more numerous (List 213, 11-18); the Court-Saint-Etienne burial belongs to Ha B (Desittere 1968, 74, 144) and the Achel-Pastorsbos burial to the transition to Ha C (*ibid.*, 74, 134). Both of these finds also include a blue glass bead. The spiral beads from Drouwen probably constitute part of a complex bracelet and spiral beads occur in necklaces in Nordic MV finds (Sprockhoff 1956, 161-164). Tubular beads occur in three hoards (List 213, 19-21). Convex, tubular and spiral beads occur in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 27-26 pls. 16, 142-158; 17, 166-226). Jockenhövel (1972, 108 n. 17) considers that the convex, spiral and tubular beads in the Ha B3 hoard from Bad Homburg, Obertaunuskries, Hesse, are of western origin (Hermann 1966, Taf. 187, 9-13, 25-35).

Biconical beads were found with the twisted neck-ring from the 'Nord de la la France' hoard (List 216, 4).

Belt ornaments. LIST 214.

During Bronze Final III stapled belt ornaments of sheet bronze were common in southern and western France; there are two principal forms, rectangular and circular. These ornaments have been studied by Audouze (1974, 246-250) who distinguishes various sub-types, but all appear to be contemporary. They were probably attached to narrow belts of organic material (*ibid.*, fig. 9). All the finds from north-eastern France and England (List 214) are LBA3, though these ornaments were still current during Ha C (*ibid.*, 250).

The rectangular form has also been discussed by Kilian-Dirlmeier (1975, 88-85) who considers that they were attached with their long axis at right angles to the belt, cf. the orientation on her Taf. 27. They appeared in the Ha B1 burial at Heidesheim, Kr. Frankenthal, Pfalz (*ibid.*, 84 no. 340; Jockenhövel 1971, 156 n. 4), but constitute a characteristic late Urnfield Lake Village type.

Spirals. LIST 215

Spirals occur in four LBA3 hoards in north-eastern France (List 215, 2, 4, 6-7) and Saint-Pierre-en-Chastre may be contemporary (List 215, 5); Port-Arthur (List 215, 8) is also LBA3 and Berg-en-Terblijt (List 215, 11) may be. The Esquermes spiral (List 215, 3) should be related to the other finds from north-eastern France. The spirals in the Haulchin hoard (List 215, 4) are smaller than the other hoard examples but have sheet attachment like the Port-Arthur spiral. The Berg-en-Terblijt spirals are more open than the other examples and are also decorated.

Double spiral pendants are known from Hesse during Reinecke D (Eggert 1976, 45) but Nordic MV finds may be more relevant (Sprockhoff 1956, 225).

Single spirals with hooked terminals were a common type in central Germany throughout the Urnfield period (von Brunn 1968, 191, 281, Karte 18); they have been divided into four types by Müller (1972), decorated spirals, types A and B, are earlier, Reinecke D and Ha A1, while plain spirals, types C and D, are later, Ha A and Ha B. There are two plain spirals in the Ha B3 Wallerfangen hoard, Kr. Saarlouis, Saarland (Kolling 1968, 198; Inv. Arch. F48 (D), 50-51), and one in the Hochstadt hoard, Kr. Hanau, Hesse (Schauer 1972a, Abb. 1, 33). Jockenhövel and Smolla (1975, 307) cite a Ha C spiral in a hoard from Slupy, Prov. Bydgoszcz, Poland (Inv. Arch. PL38, 7), as well as the isolated Scottish example (List 215, 1).

The small spirals from Herstal (List 215, 9) are both in burials with Lyzel bracelets (List 199, 9-10) which suggests a LBA 3 date. The Neerpelt spiral (List 215, 10) should be of Ha C/D date (van Impe, Beex and Roosens 1973, 13-14, 20, 23); the ring-ditch of burial 56 is stratigraphically late (*ibid.*, 24, pl. IX).

The spirals in hoards may be regarded as local products of LBA3 date; the Herstal spirals and the isolated finds from north-eastern France may be related.

Twisted neck-rings. LIST 216

Three LBA3 hoards from north-eastern France and southern England contain twisted neck-rings (List 216, 1-3) and a fourth example may be contemporary because of its associated biconical beads (List 215, 4). These neck-rings have hooked terminals and may be twisted rather than cast, but details of construction are uncertain.

Twisted neck-rings were known during MV in northern Germany (Sprockhoff 1956, 146-147, Abb. 42, 3, Taf. 28, 1) but comprised only a small part of the repertoire of Nordic MV neck ornaments. Earlier bronze neck-rings are rare in northern France (see p. 79), though gold ones are more common (Eogan 1967, 170). Miscellaneous twisted fragments in different techniques occur in LBA3 contexts at: Saint-Pierre-en-Chastre (171), Lyzel (172), Déville (173), Graville (174), Dreuil (177), Berg-en-Terblijt (209) and Elzen (211). These reflect the increased popularity of ornaments during LBA3.

The Dreuil hoard (177) contains a rolled terminal which may belong to a plain neck-ring of west-Alpine origin.

Miscellaneous Carp's Tongue objects. LISTS 217-219. MAP 73

Carp's Tongue hoards contain many unusual objects and fragments (Burgess 1968a, 39); some belong to diagnostic groups, others are rare or unique.

Lozenge-shaped mounts (List 217) are c. 4.0 cm long with one side open and the other partially or completely closed; each of the four faces of the lozenge is perforated by a rivet-hole. They form a homogeneous group of objects; while often interpreted as pommel-terminals, their use is uncertain. They are most common in western France (Briard 1966a, 12, pl. 1, 3-6) with two examples from the north-east, both in the Marlers hoard (List 217, 3); there are two English finds (List 217, 1-2), another (Inv. Arch. GB17) is

attributed to the Leigh hoard, Essex (150) but I cannot identify this piece.

Cast-bronze plates with teeth on one or both edges and loops on the back also appear to be most common in western France (Briard 1966a, 28, pl. 19, 240); there are two examples in the Dreuil hoard (List 218, 4) and examples in three British hoards (List 218, 1-3).

The semi-circular mounts in the hoards from All Hallows, Hoo, Kent (Evans 1881, 230, fig. 286), and Watford (154) can be matched in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 11, pl. 1, 1-2); this appears to be a rare form. More common are fragments of mountings of this bronze with incised and perforated ornament. Well-preserved English examples are in the hoards from Watford (154), Lulworth, Dorset (Drew 1935, pl. LXIX, 7-9), and Roseberry Topping, Yorks. (Hixon 1832, pl. IV, d; Elgee 1950, 171). In north-eastern France there are fragments in the Juvincourt (163), Dreuil (177), Saint-Roch (179), Marlers (180) and Lille Museum (227) hoards. Such complete examples as found in England appear to be rare in western France. Also rare in western France, and probably a southern English/north-eastern French type, is the plain slide (List 219). The single ridged fitting in the Saint-Roch hoard (179) does appear to be of western French origin.

Two types of central or south-eastern French origin which occur on the middle Rhine and in western France, but not in north-eastern France or Britain, are the 'vase-headed tubes' (Briard 1966a, 25-26, pl. 15, 138; Kolling 1968, 78 n. 211) and the flask-shaped objects (*ibid.*, 26, pl. 15, 141; Jockenhövel 1972, 108 n. 18, Abb. 2, 13).

Not all of the miscellaneous ornaments which occur in Breton Carp's Tongue hoards need be of Breton origin.

Brooches. LIST 220

Elbow brooches appeared in Italy during the ninth century. The spiral disc catch-plate of the brooch in Senlis (List 220, 5) is a form which should be no later than this century; while it is rare north of the Alps (Duval, Eluère and Mohen 1974, 31), there is an example from Sedan, Ardennes (*ibid.*, fig. 19, 7), an area almost devoid of Bronze Age metalwork. Both these finds are suspect and the same may apply to the examples from London and Nijmegen (List 220, 1, 6).

The elbow brooches with a long catch-plate from Amiens (List 220, 3-4) may be more reliable as this type has been found in Bronze Final III contexts at Venat, Charente, Notre-Dame-d'Or, Vienne, and Gresine, Savoie (*ibid.*, fig. 19, 1-2, 6); it persisted to the sixth century (*ibid.*, 38).

The curved bow brooch with a thin bow from the Forest of Compiègne (List 220, 2) is not a characteristic form; the shallow curve of the bow is intermediate between the violin-bow form and the deeply-curved form. There are two similar brooches from Swiss Lake Villages (Betzler 1974, 72-73 nos. 152-153) and a late Ha B date is possible for the Compiègne brooch (Lambot 1975, 17). Though it is an isolated example, it was apparently found in the same excavations as a group of Roman brooches whose provenance is not in doubt, so it may be a reliable find.

Double-edged razors with multiple-ring handles. LIST 221. MAP 74

These razors have a large blade, usually with a deep, key-hole shaped notch; the handle is composed of two or three rings, sometimes with connecting pieces, and there may be a transverse rib on the upper part of the handle. Jockenhövel recognised this as a predominantly west-European type, though Lake Village examples are known (1971, 164-166). Some early Ha B razors from the Tyrol have multiple-ring handles but never the transverse rib (*ibid.*, 159-163).

A fragmentary razor, probably of this type, occurs in a burial at Rheinberg, Kr. Moers, Rhineland (Stampfuss 1939, 33, 8p-81, Abb. 29, Taf. 8, 4-7). Desittere dated the urn early in Ha B (1968, 40-41), roughly contemporary with the date which he proposed for burial 21 at Biez (List 221, 12; *ibid.*, 73). Aschemeyer agrees with this date (1966, 17), but Jockenhövel (1971, 66) prefers a late Ha B date which seems probable if the Rheinberg and Biez razors are to be related to the western razors rather than to the Tyrol razors as Desittere implies (1968, 41). Tackenberg, as usual, can find evidence for a HaC/MVI date (1971, 134-135). Hoard finds in north-eastern France (List 221, 7-10) and southern England (List 221, 1-2) indicate a LBA3 date which should also apply to the finds from Egham, Han and Sinsin (List 221, 4, 14-15). There are several examples in the Vénat hoard, Charente (Georges and Chauvet 1895, pl. X, 85-93). There is a razor with a double-ring handle in a Bronze Final II context in the inhumation cemetery at Gours-aux-Lions, Marolles-sur-Seine, Seine-et-Marne (Mordant 1970, 46, 82-84, fig. 17, 17, pl. II, 20), but this has only a shallow notch in its blade.

Razors with multiple-ring handles appear to be of LBA3 date and most common in north-eastern France and Belgium; the British examples may be of continental origin.

Dutch bifid razors. LIST 222. MAP 74

Three related razors come from Urnfield cemeteries in the southern Netherlands; all have a V-shaped notch and two have a circular perforation in the centre of the blade. They may be compared to razors in two Bronze Final III hoards from western central France, Chedigny and Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 4, 49; 1960, fig. 7, 12); the Goirle razor (List 222, 2) is somewhat cruder than the others. The pottery from Deurne (List 222, 1) is Ha B (Desittere 1968, 71, 121) and there is Ha B material, with some Ha C, at Weert (*ibid.*, 132). Urn 53 at Goirle is probably of Ha C date (*ibid.*, 122; Verwers 1966a, 45) though it is dated to Ha D by Kimmig (1970, 48) who dates the razor to Ha C (*ibid.*).

Double-edged tanged razors. LIST 223

Double-edged tanged razors are characteristic of Britain through most of the Bronze Age. Piggott's class II has a notch, sometimes with a circular perforation or ribs (1946, 126-128, figs. 3, 6-7) and this class was certainly current during LBA3, e.g. in the Feltwell Fen hoard, Norfolk (Inv. Arch. GB35, 13). Ring handles were more common than atangs on continental razors at this time. The ribbed fragment in the Graville hoard (List 223, 1) may be of British origin but the large circular perforation on the other Graville razor

and the Han razor (List 223, 2) appear alien to the British series where only an example from Old England, Brentford, Middlesex, has a large perforation (Piggott 1946, 138 no. 48, fig. 7). There are two double-edged tanged razors with shallow notches in the Venat hoard, Charente (George and Chauvet 1895, pl. X, 82-83).

Single-edged razors with ring-handles. LIST 224. MAP 74

The form of razor most common in west-central Europe during Ha B3 has a convex single edge, a central notch in the back and, often, a ring handle (Jockenhövel 1971, 218-238). A few examples occur in northern Germany in MV or MVI contexts (Tackenberg 1971, 135-137, Liste 64 a-c, Karte 25). The first Old England razor (List 224, 1) belongs to Jockenhövel's Möringen variant, of Lake Village origin with two outliers in northern Germany (1971, 218-220, Taf. 498). The Han and Lingen razors are probably also Lake Village products (List 224, 3-4). The second Old England razor (List 224, 2) is undiagnostic, though it appears to be an original product in contrast to two other pieces from the same site (Wheeler 1929, pl. I, fig. 2, 1-2) which are re-used.

Nordic razors. LIST 225. MAP 74

The form of razor characteristic of the Nordic Late Bronze Age has a single-edged blade, roughly rectangular, tapering to a handle at one end; the blade usually has a straight back though the end can be upturned; the handle is usually curved but may be replaced by a tang (Baudou 1960, 29-38). Razors with the handle curved back along the blade or with a tang occur in northern Germany and have been discussed by Sprockhoff (1956, 110-119) but the most thorough documentation for this region has been provided by Tackenberg (1961-63; 1971, 142-149).

Nordic razors are rare in central Europe; there is a single example from a Ha B burial at Kopušany, Slovakia (Jockenhövel 1971, 202-203 no. 386). This razor has an S-shaped handle and two such razors are known from the northern Netherlands (List 225, 2, 4). Both the Drouwen and Harendermolen razors are associated with zweiheklige Terrinen, a characteristic form of urn common in Lower Saxony and the northern Netherlands (Tackenberg 1939, Karte 1; Waterbolk 1962, 23, Abb. 14-15). Razors with S-shaped handles and straight backs belong to MIV and MV; Tackenberg prefers a late date for most north-west German examples and cites the Harendermolen association (List 225, 4) as an example (1961-63, Liste 1a; 1971, 143, Liste 67, Karte 27). Few razors with S-shaped handles and upturned blades can be dated precisely in north-western Germany; Tackenberg places them in MV and MVI (1961-63, Liste 1b; 1971, 143-144, Liste 68, Karte 27). The Drouwen razor (List 225, 2) should probably be contemporary with the Harendermolen razor, MV.

Burial 1 from Harendermolen (List 225, 5) contains a razor with a spiral handle. This is a common MV type, though Tackenberg places some finds in MVI (1961-63, Liste 61; 1971, 147-147, Liste 72a, Karte 28). If both Harendermolen razors were broadly contemporary a MV date is probable.

The decoration on the Sittard razor (List 225, 7) should date it to MV; the form with a recurved handle is most common in northern Germany during this period, though its origins lie in MIV (Tackenberg 1961-63, Liste 2, Karte 2; 1971, 145-146, Liste 69). The Dutch find may be related to finds on the R. Lippe, for examples in western Lower Saxony are rare.

Razors with loop handles are predominantly MV though a few belong to MVI (Tackenberg 1961-63, Liste 11, Karte 8; 1971, 147-148, Liste 74). The Wedderveen razor (List 225, 6) should be of MV date. The Staple Howe razor (List 225, 1) should be related to this form but the continuation of the loop along the back of the blade is not a characteristic Nordic feature though it may be related to a variant with a recurved handle cast onto the back of the blade (Tackenberg 1961-63, Liste 3, Karte 2; 1971, 145). The Staple Howe razor should be LBA3 but need not be a Nordic import.

Nordic tanged razors appeared during MV though Tackenberg dates most of MVI (1961-63, Liste 12, Karte 9; 1971, 148-149, Liste 75). The tanged razor from Drouwen (List 225, 3) was associated with a zweihenklige Terrine like another Nordic razor from Drouwen (List 225, 2) and should be of MV date.

These Nordic razors show that the north-eastern Netherlands formed the western margin of the Nordic distribution.

Tweezers. LIST 226

Bone tweezers occurred in Wessex during the Early Bronze Age and bronze tweezers were current at the same time in central and northern Europe (Gerloff 1975, 125-126). The earliest insular association of bronze tweezers is in the MBA Bishopsland hoard (List 226, 12) and Eogan considers that these were derived from northern Europe (1964, 277), but this Irish find is isolated and no other insular finds can confidently be dated before LBA3.

Two pairs of tweezers come from the Gasteren cemetery; both have narrow shafts with triangular terminals. The associations of the first (List 226, 24) in burial 45 under a 'long bed' suggest a LBA2 date (see p.154) which should also apply to the second pair (List 226, 25), from an unurned cremation. The Gasteren tweezers and the pair from Haarle belong to Tackenberg's second variant, with long shaft (1971, 152-154, Liste 78, Karte 33, Taf. 35, 3). The type with narrow shafts occurs in north-western Germany and elsewhere in northern Europe and Tackenberg dates the second variant to the end of the Bronze Age and the beginning of the Iron Age (*ibid.*, 154), though the Gasteren finds may be somewhat earlier. The Nierssen tweezers (List 226, 27) are similar in form to the Gasteren tweezers but have a collar, a feature also present on the pair from All Cannings Cross (List 226, 8). Tackenberg treats tweezers with collars as a separate group (*ibid.*, 171-173, Liste 88 a-b, Karte 37). They occur sporadically in north-western Germany and may be straight or have triangular terminals; a Ha C origin in central Europe is suggested and MVI and Iron Age dates proposed for the northern finds. The associated urn at Nierssen does not appear to be a diagnostic local type.

The Drouwen and Zuidlaren tweezers (List 226, 23, 26) belong to Tackenberg's group with triangular blades (*ibid.*, 165-167, Liste 85, Karte 36), a

common Nordic form from MIII to MV, though the later examples are usually decorated (Baudou 1960, 40, Taf. VIII, XII A). The Drouwen tweezers are decorated and the associations suggest a MV date (see p. 220). Tackenberg dates the Zuidlaren burial to MVI because of the urn (1971, 67). The associated pin (List 184, 14) may be related to a contemporary example from Unterteddt, Kr. Rotenburg, Lower Saxony (Laux 1976, 138 no. 843). The Kneysel tweezers (List 226, 22) were associated with a penannular gilded ring (List 211, 9) in burial 34 which could be LBA 3 or later.

The decorated tweezers from Cambronne-lès-Ribecourt (List 226, 15) are a Nordic MV export; this type is most common in Denmark and Schleswig-Holstein, though it also occurs in Lower Saxony (Baudou 1960, 42, Taf. VIII, XII E1). The form with a straight or slightly expanded blade is usual in north-eastern France, Belgium, Britain and Ireland. One other exception is the broad notched pair from Fort-Harrouard (List 226, 14). The straight form appears to be absent from southern Scandinavia during the Late Bronze Age though Tackenberg lists forty-four examples from north-western Germany where they occur during MV and MVI, when the collared form appears; MIV finds are rare but the type continues into the Iron Age (1971, 168-171, Liste 87, 37, Karte 37).

The two pairs of iron tweezers in Belgium come from Ha C burials containing iron razors (List 226, 19-20; see p. 265). Tweezers are common in central Europe during Ha C as parts of toilet sets (Kossack 1959, 18, 48, Abb. 12A, 19). The bronze examples from Biez and Han (List 225, 18, 21) should be LBA3 (see p. 219) and the Lyzel and Saint-Pierre-en-Chastre tweezers should be contemporary (List 226, 16-17). The dates of the various pairs from Fort-Harrouard (List 226, 14) could be more wide-ranging. The British hoard finds (List 226, 1, 6) are LBA3 and contemporary bronzes are present on most of the settlement sites; Ivinghoe and Egham (List 226, 2, 7) should be LBA3, Merlin's Cave (List 226, 4) could be contemporary, while there is later material from Old England, All Cannings Cross and Staple Howe (List 226, 5, 8, 10) and the collar on the All Cannings Cross pair could be a late feature. Tweezers occur in two Irish LBA3 hoards (List 226, 11, 13).

There are many associations of tweezers with razors. Only Mucking and Grafton (List 226, 3, 9) of the British finds have not also produced a razor, if not always in direct association. This is not an Irish phenomenon but is repeated in all four Belgian finds (List 226, 18-21), in two Dutch finds (List 226, 23-24) and at Fort-Harrouard and Saint-Pierre-en-Chastre (List 226, 14, 16). Jockenhövel (1971, 166) considers that the association of razors and tweezers in the lower Rhine area reflect Nordic influence. The British associations are characteristic of settlements rather than hoards or burials.

Like razors, tweezers demonstrate the westerly extent of north-German types into the Netherlands.

Irish types supposed to be of foreign origin

It has been suggested that several Irish types of the Dowris phase were derived from Scandinavia, often without any intermediary (Eogan 1964, 317; Herity and Eogan 1977, 213). Thrane is somewhat sceptical of claims for direct connections (1975, 233-234).

Rattle-pendants, though common in Scandinavia, probably reached Britain and Ireland from France (see p. 196) and the same may be true of bar-toggles.

Bronze horns are known in Ireland (Coles 1963; 1967b), northern Germany (Sprockhoff 1956, 248-253) and southern Scandinavia (Broholm, Larsen and Skjerne 1949) during the Late Bronze Age. The Irish horns belong to the Dowris phase (Eogan 1964, 307) and derivation from Scandinavian lurer has been proposed (Herity and Eogan 1977, 213). The German horns, both musical instruments and drinking vessels, are of MV date; the appearance of lurer cannot be dated precisely, but they were probably current during MV (Coles 1963, 344-347). Nordic horned helmets were probably produced during MIV (Hencken 1971, 169-171).

It is reasonable to accept that bronze horns were copies of organic horns (Coles 1963, 347-349). Their musical range is very limited (*ibid.*, 337-343) and Coles has suggested that they had a symbolic function. The Dowris find, probably a bog deposit of votive nature, contained horns and crotals; the former are said to represent the horns of a bull and the latter the genitals, and horns and crotals together are said to provide evidence for a bull cult (Coles 1965b; 1971b). This may be so but, as Hencken has pointed out (1971, 173), bulls were sufficiently common for the diffusion of such a cult to be an unnecessary assumption. Lurer are distinct in form from Irish horns and Thrane doubts direct influence from Scandinavia (1975, 234 n. 149). There are fragments of a horn of Irish form from the Loire at Orléans, Loiret (Cordier 1976, 550, fig. 5, 33).

Hawkes' derivation of Irish gold dress-fasteners from Nordic brooches (Hawkes and Clarke 1963, 223) is usually accepted (Eogan 1964, 302; Herity and Eogan 1977, 213); Nordic fibulae have been found in Romania and in Lake Villages (Thrane 1975, 225-226), but the most westerly finds in northern Europe are from Drenthe (see 200, 201) and Thrane (*ibid.*, 234 n. 151) is not convinced. Gold gorgets (Powell 1973-74) have, by their ribbing, been derived from MV neumarkische Halskragen (Eogan 1964, 306; Raftery 1967, 71; Herity and Eogan 1977, 214; Sprockhoff 1956, 135-136, Taf. 22) but both types may be independent metal versions of multiple-strand bracelets and there are no intermediate finds, with the possible exception of the enigmatic gold 'cape' from Mold, Flints., which is probably of earlier date (Powell 1953). Thrane, again, is dubious (1975, 234). The gold disc from the Lattoon hoard, Co. Cavan, and its concentric circle ornament has been claimed as Nordic (Eogan 1964, 304, fig. 13, 9; Herity and Eogan 1977, 213) but this connection has been denied by Gräslund (1967, 63 n. 32). Concentric circle ornament in general is often derived from northern Europe (Longworth 1965-67, 132-133) but Thrane has pointed out that it was not unknown in other parts of Europe (1975, 235).

If disc-headed pins were of Scandinavian inspiration (see p. 203-5), the only pin from Britain or Ireland certainly of Nordic origin is the wart-headed pin from Brentford (see p. 201-2).

Irish scholars have usually assumed that the amber found in their country was of Scandinavian origin (Eogan 1964, 302; Herity and Eogan 1977, 213). Amber was more popular in Ireland than in Britain during the later Bronze Age; it occurs in five British finds: the hoards from Llangwyllog, Anglesey (Lynch

1970, 208-209, fig. 68, 19), Feltwell Fen, Cambs. (Inv. Arch. GB35, 16), Balmashanner (145) and Adabrock (222) and the Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 13). Only at Llangwyllog and Balmashanner are more than one or two beads present. Irish finds are more numerous (MacWhite 1944). Sufficient quantities of amber may have been available in eastern England to preclude the necessity of Baltic amber during the Early Bronze Age (Coles and Taylor 1971, 11) and British amber was probably exploited at this time (Harding and Hughes-Brock 1974, 156-159) but the northerly distribution of Late Bronze amber in Britain suggests a relationship with Ireland and amber beads occur in several MV hoards in northern Germany (Sprockhoff 1956, 164). Probable Nordic origin for the British and Irish Late Bronze Age amber may be admitted.

Bracelets with circular perforations from Ireland may be of Nordic origin, cf. the possible fragment in the Isleham hoard (see p. 369).

A smaller group of Irish types has been supposed to be of Mediterranean origin (Herity and Eogan 1977, 214). Cauldrons may be removed from this group (see p. 147-8) and convincing parallels for lock-rings do not appear to be forthcoming (Eogan 1969, 98-100), though cf. the possible Mediterranean origin of 'hair-rings' (see p. 215). Heart-shaped bullae (Eogan 1964, 304, fig. 15, 8) bear a general resemblance in form and probable function to Lyzel pendants (see p. 214).

V-notched shields, found in Ireland alongside U-notched shields but absent, like them, from Britain (Coles 1962, 157-162; Gräslund 1967), are predominantly east Mediterranean and Iberian. The Irish shields are of wood and leather (Coles 1962, 8); the claim for a representation on a rock-carving (Coles 1965a) has been refuted (Hawkes 1969, 192 n. 10; Shee and O'Kelly 1971). It has been assumed that V-notched shields were derived from Iberia and U-notched shields from Scandinavia (Herity and Eogan 1977, 197, 213-214) but chronology is somewhat uncertain (Gräslund 1967, 69). Iberian representations appear on stelae of Almagro's group II, found mainly in Extremadura (1966, 156-170, 197-198); these stelae are usually dated to the eighth century or later (ibid., 204-208; Schubart 1975, 101, 108-109, Abb. 26), though it has been suggested that stelae of group IIa, portraying only swords, spears and shields appeared during the ninth century (Pingel 1974, 6, 14-15, Abb. 2). U-notched shields could certainly be earlier than LBA3 (see p. 115-7), so Irish V-notched shields may have been of local origin.

LBA3: SUMMARY

One of the principal characteristics of LBA3 is the re-emergence of a pattern of regional groups of axes, absent since MBA2. The socketed axe was the dominant form. Three major types can be recognised in Britain: south-eastern, south Welsh and Yorkshire. The distribution of the south-eastern type covers an area which includes some minor forms of socketed axe, small concentrations of late palstaves and most British finds of end-winged axes. South Welsh axes are the dominant type in south-western Britain. Yorkshire axes are also common in Lincolnshire and spread west across the Peninnes and north into Scotland. There are smaller regional types in the east Midlands and the northern part of East Anglia. The bag-shaped axe, dominant in Ireland, occurs in Britain principally in north Wales and northern Scotland. The faceted type, probably of LBA2 origin, is more evenly distributed over most of Britain and Ireland. Socketed axes outnumber winged axes in north-eastern France, while the reverse is true in the north-west; apart from the Plainseau type, common in the Somme valley, most socketed axes in north-eastern France resemble the English south-eastern type. A small group of socketed axes appears to be characteristic of Belgium but these axes are in the Anglo-French tradition and such 'western' axes seem to have been dominant south and west of the Meuse, while Lower Meuse axes were more common in the Rhine-Meuse valley and north Dutch axes are 'continental' rather than 'western'. Winged axes in the Low Countries are largely confined to the south-east; while some appear to be of western origin, others are probably from the Middle Rhine, whence at least one winged axe reached England in the Minnis Bay hoard.

The similarity between north French axes of type atlantique and English south-eastern axes reflects close contact between these two areas, closer than contact between south-eastern Britain and north-western France, where winged axes were dominant. The British distribution of winged axes is south-westerly and should represent influence from north-eastern France. Westerly contacts are reflected by the greater number of south Welsh axes in western France than in the north-east. A few south Welsh axes occur in southern and eastern Britain. Yorkshire axes are rare south of the Fens and absent south of the Thames. South-eastern England, at least the Thames valley and the south coast, appears to have been in closer contact with north-eastern France than with northern Britain though more detailed comparison of south-eastern and type atlantique axes is needed to establish the nature of this contact.

The axes of the northern Netherlands form the western extent of a north German distribution. Lower Meuse axes are part of a distribution common to the German lower Rhineland also demonstrated by Geistingen axes, perhaps later than LBA3.

Most types of specialised tool are common to Britain and northern France. This is true of the solid-bladed socketed chisel, though there is a fully-

socketed form more common in south-eastern England. Southern Britain and northern France shared the same form of tanged leather-working knife and socketed gouges were also common in these areas. The chisels and gouges in Belgium and the Netherlands are probably of western origin. Quadrangular socketed hammers with plain collar are found in southern Britain and northern France, though anvils are more numerous in northern France. Tanged sickles of Urnfield origin occur in northern France and southern Britain; knobbed Urnfield sickles are rare in northern France but occur in Belgium and the southern Netherlands. The Minnis Bay type, characteristic of the lower Thames valley, is also found in northern France.

The double-edged knife was the characteristic insular form of knife during LBA3 while the single-edged form was more common on the continent. Double-edged socketed knives are known from northern France and double-edged tanged knives from northern France and Belgium. Late Urnfield single-edged tanged knives are equally common in Belgium and north-eastern France, with one find from England. Single-edged socketed knives are characteristic of LBA3 in the Netherlands, where they represent the westerly extent of a north German distribution, though this form is of Urnfield origin. There are finds from north-eastern France and England. The two single-edged solid-hilted knives from north-eastern France are of west Alpine origin. Carp's Tongue knives are more common south-eastern England than in north-eastern France and are absent from the Low Countries. Double-edged knives show a distribution common to southern England and northern France, while single-edged knives reflect Urnfield influence and single-edged socketed knives reflect affinity between the Netherlands and north-western Germany.

Cast perforated discs are an insular type found in northern France and Belgium; fish-hooks reflect west-Alpine Urnfield influence in north-eastern France and Belgium.

Pegged spearheads, plain or with decorated sockets, are common to LBA3 hoards in Britain and north-eastern France. Large pegged spearheads, characteristic of the Scheldt basin, also occur in these areas. Most Dutch spearheads of LBA3 appear to be of Nordic or north German origin. British barbed spearheads are rare on the continent.

A few late Urnfield solid-hilted swords occur in north-eastern France, Belgium and the southern Netherlands, but there is only one diagnostic find from England. Antennae-pommel swords of Nordic origin occur in the northern Netherlands and England. Insular swords with oval bronze pommels and the socketed sword from Whittingham with a bracelet re-used as a pommel may reflect influence of continental solid-hilted swords. A small number of late Urnfield flange-hilted long swords is found in north-eastern France and Belgium. The Carp's Tongue sword was the sword characteristic of northern France during LBA3 and there is a concentration of finds in the Seine valley; a scatter of examples reaches the southern Netherlands and British finds are confined to south-eastern England, suggesting derivation from north-eastern France. Ewart Park swords were characteristic of Britain and Ireland with the major concentration of finds in the lower Thames valley; continental finds are comparatively rare, though widespread. Socketed swords, probably derived from double-edged socketed knives, are confined

to Britain. Small bag-shaped chapes are rare in Brittany and more numerous in north-eastern France than in the west; they occur in Ireland, Belgium and the southern Netherlands, as well as in southern Britain and may be of English/north-eastern French origin. The Déville hoard includes a chape of west-Alpine origin. Bourget arrowheads of west-Alpine origin occur in north-eastern France and Belgium.

Irish-British buckets were derived from the east-central European Kurd type during LBA3 but intermediate finds are rare. Bowls with cruciform handle-attachments occur in Britain and north-eastern France but their precise chronology is obscure and they were not imitated. A heterogeneous group of cast-bronze vessels from Britain and Belgium may imitate ceramic cups.

A wide range of horse-gear was current during LBA3. Circular strap-crossings were probably derived from British LBA2 forms. Bugle-shaped objects appear to be of western French origin, though they are common in north-eastern France and southern Britain; they are absent beyond the Somme. The two-piece form seems to be exclusively insular and may be related to Parc-y-Meirch double rings, a British type with a somewhat northerly distribution. Rattle-pendants are probably of Nordic origin but the British and Irish examples were probably derived via northern France; the same may apply to bar-toggles. Guevaux discs are a west-Alpine form which reached north-eastern France and Belgium; most of the phaleræ from north-eastern France, England and Ireland are probably of west-Alpine origin. Antler cheek-pieces, common to north-eastern France, Britain and Belgium are found in Lake Village contexts. Buttons are more heterogeneous and occur in a variety of contexts; the most diagnostic British buttons, the Llangwyllog type, are unknown on the continent.

While ornaments were rare during LBA2 they were common during LBA3; the chronology of some of the simpler pin types is probably not restricted to LBA3 but extends earlier and later. Roll-head and nail-head pins are among these common, simple types. Vase-headed pins represent a form of late Urnfield origin but some examples, especially in Britain, may be local versions. Cup-headed pins are characteristic of Ireland and absent from north-eastern France and Belgium. The wart-headed pin from Brentford is a Nordic export. Convex-headed pins are a heterogeneous group but bi-conical-headed pins appear to be characteristic of lower Rhine Urnfield. Pins with hollow globular heads are of Urnfield origin; the French finds are probably of Lake Village origin, the Belgian and Dutch finds derived from the middle Rhine. Disc-headed pins are common only in Ireland and northern Britain; this type is probably of Nordic origin and the forms with straight and bent shaft should both have appeared during LBA3. Disc-headed pins with knobs occur in Belgium. The continental settlement sites of Saint-Pierre-en-Chastre, Han and Fort-Harrouard have produced many pins of a variety of types, many of which should be LBA3.

Middle Rhine bracelets of Homburg and Balingen type reached north-eastern France and southern Britain and inspired various forms with transverse rib and line ornament in north-eastern France. Also of middle Rhine origin was the Wallerfangen type which reached north-eastern France and southern England, while C-section bracelets in these areas are of west-

Alpine origin. Two forms of bracelet appeared in the Netherlands, the Odoorn type, with massive section, and the north Dutch omega type, with flat or slightly convex section. Odoorn bracelets may be related to a Nordic form but omega bracelets are derived from the west Alpine bracelets. In north-eastern France and Belgium several forms of bracelet with large everted terminals appeared. The Lyzel type, with solid section, was more characteristic of north-eastern France, while the hollow-section form was more characteristic of Belgium. The C-section form was French. Hollow-cast bracelets with plain terminals were probably a version of the Belgian form with large everted terminals. Bracelets with disc, rolled and ring terminals form a small group characteristic of north-eastern France and reaching Britain. Recurved bracelets in Britain and north-eastern France may be of Lake Village origin. Scottish Covesea bracelets were probably simple versions of Irish gold bracelets; they do not appear to reflect continental influence and certainly do not represent population movement across the North Sea.

Lyzel pendants were probably products of the same workshops in north-eastern France as local bracelets with large everted terminals. Several Urnfield pendants reached north-eastern France, Belgium, the southern Netherlands and southern England.

Penannular gilded rings occur in several Urnfield burials in Belgium and the southern Netherlands; this type of Irish origin probably reached the lower Rhine via southern England. Bronze beads occur in some of these burials but also in several hoards from this area and north-eastern France.

The belt ornaments found in north-eastern France and southern England are probably of west-Alpine origin; the same is possible for twisted neck-rings. Spirals in north-eastern France and the Low Countries may be a local type.

Several Carp's Tongue ornaments of western French origin occur in north-eastern France or Britain: lozenge-shaped mounts, semi-circular mounts, ridged fittings, toothed plates; plates with incised and perforated ornaments appear to be less common in western France and plain slides seem to be a southern English/north-eastern French type.

A few brooches, principally elbow brooches, from north-eastern France, the Netherlands and England, may be of LBA3 date.

Razors reflect regional differences. The double-edged form with multiple-ring handles is predominantly continental, while the double-edged tanged form is predominantly British. Dutch bifid razors, from the south, are probably of French origin; Nordic razors are predominant in the northern Netherlands. A few west-Alpine single-edged razors occur in Belgium, the Netherlands and England. The Nordic razors in the Netherlands are accompanied by tweezers of north-east German origin; tweezers and razors are usually associated in Britain and Belgium. One pair of Scandinavian tweezers reached north-eastern France.

The importance of Irish contacts with Scandinavia during LBA3 may have been exaggerated; some of the relevant types may have been derived from France.

LBA3 hoards are numerous and widespread (Map 75). They are especially common in south-eastern England along the south coast, in the lower Thames valley and north to East Anglia. Finds in north-eastern France are concentrated in river valleys. There is an even distribution through most of Belgium and the Netherlands, with Dutch hoards mainly easterly.

The British metal of LBA3 displays a uniform content over a wide area (J. P. Northover). This is consistent with the widespread relations and the large number of hoards.

Local industries in south-eastern England, north-eastern France, Belgium, the lower Meuse area and the northern Netherlands are demonstrated by the distribution of socketed axes and ornaments such as bracelets. Nordic and north-west German influence was predominant in the northern Netherlands, while middle Rhine and west-Alpine influence was strong in Belgium and north-eastern France whence some was transmitted to Britain. Many types of British or northern French origin occur in middle Rhine hoards or in Lake Villages. South-eastern England and north-eastern France shared socketed and winged axes, socketed chisels and gouges, tanged leather-working knives, socketed hammers and double-edged knives. Sickles show forms more common on one side of the channel than the other, tanged sickles and Minnis Bay sickles, like swords, Carp's Tongue and Ewart Park, with small bag-shaped chapes. LBA3 spearheads are also common to both sides of the channel. One-piece bugle-shaped objects also unite northern France and southern England as do most Carp's Tongue ornaments and plain slides. Razors with multiple-ring handles more common in France reached southern England. The ornaments of north-eastern France, bracelets and pendants, were not adopted in southern England but a few imports occur, especially in the Minnis Bay hoard (156) which is the best representative of the widespread contacts of LBA3. Some late Urnfield types: swords, single-edged knives, belt ornaments, bracelets are more numerous in north-eastern France than southern Britain where only isolated examples occur, cf. the Lake Village chape and sphere in the Déville hoard (173).

CHAPTER 7

LATE BRONZE AGE 4 AND EARLY IRON AGE 1

LATE BRONZE AGE 4

LBA 4 is the final phase of the Late Bronze Age in southern Britain; at this time bronze was still the usual material for tools and weapons but no subsequent phase of dominant bronze-working can be identified. Ha C and local types which are contemporary, but unknown in LBA3 contexts, define LBA4 (Burgess 1968a, 26-33, 42-44; 1974, 211-214), which Burgess has recently named after the Llyn Fawr hoard (218), though this phase is LBA3 in his terminology (1976a, fig. 4.9).

Hallstatt bronze swords allow correlation through most of Europe and items of horse-gear can be linked to the Ha C phase of central Europe through the Belgian finds published by Mariën (1958). Characteristic razors provide correlation with Ha C in eastern France and west-central Europe (see p. 263-5) and Armorican socketed axes with the final phase of bronze-working in north-western France (Briard 1965, 241-282). Armorican socketed axes are the most characteristic type in north-eastern France at the same time as LBA4 (Verron 1976a, 599; Gaucher and Mohen 1974, 70) but contemporary local products, whether of bronze or iron, are difficult to identify. It is burials rather than hoards which contain Ha C material in Belgium (Mariën 1958) and the southern Netherlands (de Laet 1974, 394-405). The sparse evidence for correlation with northern Europe is intractable (see p. 257-8). In Ireland (Herity and Eogan 1977, 219-221; Raftery 1976a, 190) and Scotland (Coles 1959-60, 47-52, 55) the local bronze industries appear to have continued contemporary with Ha C, though less Scottish material need be so late as Coles suggested (see p. 204, Adalbrock hoard).

The relationship between LBA3 and LBA4 depends on the interpretation of the origin of Hallstatt bronze swords (see p. 243-6).

The evidence for the transition of EIA1 is somewhat negative; the disappearance of bronze tools and weapons and the absence of any Ha D material from LBA4 contexts. A few iron objects, imports and local products, appeared in southern Britain during LBA4; evidence of any sort from north-eastern France is sparse but iron was in common use at this time in Belgium and the southern Netherlands. It is uncertain whether LBA3 bronze production in the northern Netherlands was prolonged or not.

EARLY IRON AGE 1

The first phase of iron-using in southern Britain is marked more by the absence of bronze tools and weapons than by the presence of iron. Some Armorican socketed axes may be contemporary with this phase but associated finds are lacking in Britain. Thames daggers (see p. 249) indicate insular iron-working contemporary with Ha D and EIA1 may be characterised by pre-La Tène imports. The late Hallstatt/Early La Tène division appears to have been a significant one on the Marne (Hatt and Roualet 1977, 10-11) and may have been so in Britain (Harding 1974, 157-176; Hawkes 1976a; 1976b); it remains a convenient point at which finally to exorcise the Bronze Age of southern Britain (Collis 1977, 6) and at which to conclude the present work. Iron was now presumably dominant in north-eastern France and throughout the Low Countries. Though bronze-working may have persisted in Ireland (Eogan 1964, 323) and in Scotland (Coles 1959-60, 52-53), recent Irish writers suggest that iron-working could have developed in or soon after Ha C (Raftery 1976; Herity and Eogan 1977, 246) and Scotland's late Hallstatt and early La Tène contacts may be less diagnostic than previously supposed (Spatling 1974; see pp.

Because of the uncertain chronology of some types which may belong to EIA1 and the dearth of well-dated types characteristic of this phase EIA1 material is considered alongside LBA4.

TOOLS

Linear-faceted axes. LIST 227. MAP 76

This distinctive group of socketed axes has facets bounded by ribs; these facets may be well-defined, flat or grooved, or merely be represented by the ribs on the angles of the axe. Linear-faceted axes occur in Britain and in adjacent parts of the continent; brief discussions have been provided by Butler (1963a, 87-88) and Moore and Rowlands (1972, 30).

The origin of linear-faceted axes is demonstrated by axes in the LBA3 hoards from Meldreth and Butley (List 227, 3, 25) which are octagonal-section faceted axes with ribs on the angles; similar axes occur in the LBA3 Saint-Roch (List 227, 37) and Menez-Tosta, Finistère, hoards (Briard and Giot 1958, pl. III, 11). Linear-rib ornament was applied to axes of southeastern/type atlantique form on both sides of the Channel: Paston and Compiègne (List 227, 18, 35). The Grantham axe (List 226, 11) also appears to be typologically early.

Two regional forms of linear-faceted axe are apparent in Britain (Map 76); the larger in northern East Anglia and the smaller in Dorset. The East Anglian axes (List 227, 1-2, 4-5, 13-21, 26-27) have a round mouth with collar and indistinct horizontal rib; the blade is trapezoidal with a broad edge and bears grooved facets usually marked by triple or quadruple ribs. In section the blades vary from square to oval. Among the most characteristic examples are those in the Watton hoard (List 226, 19). The Dorset form (List 226, 6-9) is clearly related but these axes are made of very thin metal, perhaps under the influence of Armorican socketed axes, and have a more markedly trapezoidal blade. These linear-faceted axes are clearly distinct from LBA3 south-eastern and East Anglian types and are absent from LBA3 hoards in southern Britain; the presence of two linear-faceted axes in the Sompting hoard (List 227, 28) shows that they were current during LBA4. Long ribs ending in pellets and the occasional presence of ring-and-dot motifs show a typological relationship with Sompting axes of LBA4 (Burgess 1967-70, 269) and the Calne axe (List 227, 29) has the 'back-to-front' mouth characteristic of the Sompting type and the Armorican type (*ibid.*). The linear-faceted axe in the Claughton hoard (List 227, 10), with its short central rib, may be related to the Yorkshire type and could be of LBA3 date.

The production of linear-faceted axes on the continent is indicated by a mould from Erkrath, Ldkr. Düsseldorf-Mettmann, Rhineland (Marschall, Narr and von Uslar 1954, 46, Abb. 19, 7), for axes with a deep collar and single facets marked by a rib on the inner angle. Tackenberg (1971, 42-43, Liste 22, 1-2, 59) groups the Erkrath mould with the Dutch mould for faceted axes from Havelte (List 127, 6) and a mould in a MVI hoard from Kölpin, Kr. Kolberg-Körlin, Pomerania (Kielcina, Prov. Koszalin). Faceted axes are common in the Nordic area (*ibid.*, 41-45, Liste 22-25, Karte 12-13) and some bear linear ornament, e.g. Bösel, Kr. Luchow, Lower Saxony (*ibid.*, Liste 23, 6; Sprockhoff 1941, Taf. 40, 2), but these may not be directly related to British linear-faceted axes. The linear-faceted axes from Wachstum, Nijmegen, Ter Wisch and Roermond (List 227, 42-44, 47) may be derived from the form represented by the Havelte mould which is not a characteristic British form (see pp. 166-7), they have a deep collar, usually with a narrow horizontal rib, and a trapezoidal blade with broad facets and double ribs. The Roermand axe is unlooped like the axes from Prov. Namur and Maastricht (List 227, 41, 46) and an axe in the hoard from Leverkusen-Manfort, Rhein-Wupper Kreis, Rhineland (Marschall, Narr and von Uslar 1954, 84, Abb. 96; Tackenberg 1971, Liste 25, 2, Taf. 17, 5). Tackenberg dates the Leverkusen hoard to MVI because of its massive hollow bracelet (*ibid.*, 219-220). There is a small group of looped axes with facets defined by a rib on the inner angle from the Rhineland (*ibid.*, 45, Liste 26, Taf. 17, 4; 18, 1-3) which includes the second axe from the Leverkusen hoard and should be related to the Erkrath mould. These linear-faceted axes from the eastern Netherlands and the German Rhineland appear to constitute an independent, if heterogeneous group. Only the axe from Monster, on the west coast of Holland (List 227, 45), appears to be an import from Britain, cf. the examples from Mildenhall and Delvine (List 227, 26, 32).

Another continental group of linear-faceted axes includes the examples from Paris, Court-Saint-Etienne and Wichelen (List 227, 36, 38-39); they are distinguished from the Dutch and Rhineland axes by a narrower blade with better-defined ribs and a more circular mouth with shallower collar. With these axes may be grouped the example from Land Stargard, Mecklenburg (Sprockhoff 1937, 30, Taf. 5, 17), and, perhaps, two parallels which Sprockhoff cites from Thuringia (*ibid.*, 30): Lossa, Kr. Eckartsberga, and Sondershausen. Court-Saint-Etienne barrow 3 provides a late Ha C date. Another continental find of a linear-faceted axes is in the deposit from Forsthaus Schorlenberg, Alsenborn, Kr. Kaiserlauten, Pfalz (Sprater 1939; Kolling 1968, 145 no. 1, Taf. 54-55). This axe has a plain collar and square section with broad double facets defined by ribs which meet to form a central rib (Sprater 1939, Abb. 1, 10). The Alsenborn hoard probably represents a votive deposit (Kubach 1977, 578; Schauer 1971, 202-205; Kolling 1968, 113). It contains mostly fragmentary objects of bronze and iron; the most diagnostic are fragments of a Ha C bronze sword of Gündlingen (Cowen 1967, 382 n. 3, 431 no. 50)/Steinkirchen (Schauer 1971, 199 no. 628) type. Other bronzes include: three socketed gouges (Sprater 1939, Abb. 1, 34, 49, 54), a spearhead (*ibid.*, Abb. 1, 48), two omega-shaped handle-attachments, one retaining the recurved terminal of a handle (*ibid.*, Abb. 1, 35-36), fragments of undecorated socketed axes (*ibid.*, Abb. 1, 11-20) and sheet bronze (*ibid.*, Abb. 1, 21-33), while iron objects include: part of the blade of a long sword with lozenge section (*ibid.*, Abb. 1, 1), a spearhead (*ibid.*, Abb. 1, 4), two single-edged tanged knives (*ibid.*, Abb. 1, 5-6), a flesh-hook terminal (*ibid.*, Abb. 1, 7) and a handle (*ibid.*, Abb. 1, 8). Schauer (1971, 202 n. 8) stresses the late Urnfield origin of the bronze axe; gouges and spearhead and considers that the bronze handle-attachments belong to buckets of Hajuböszörmény or Kurd type, while the iron handle is an imitation of bronze handles on bowls of Stillfried/Hostomice and related types. The iron knives, spearhead and flesh-hook are also derived from late Urnfield bronze forms; the iron spearhead and sword are both compared to Greek Geometric and Proto-Geometric forms.

Seen from western Europe the contents of the Alsenborn hoard are less strange. Bronze socketed gouges are associated with linear-faceted axes in the Blandford (214) and Sixpenny Handley (216) hoards and also occur at Llyn Fawr (218) with a long sword and a spearhead of iron; barrow 3 at Court-Saint-Etienne (228) contains a linear-faceted axe with an iron spearhead and flesh-hook.

Linear-faceted axes demonstrate the continued existence of regional production of bronze axes during LBA4 in East Anglia, Dorset and the eastern Netherlands and show that bronze was still used at this time in these areas as well as north-western Germany, Belgium and north-eastern France. While the Court-Saint-Etienne axe (List 227, 38) appears to be a weapon by its context, the British axes continued to be deposited in hoards and probably retained their function as a common tool, notwithstanding possible employment as weapons.

Sompting axes

Burgess (1967-70) has defined the type of socketed axe which stands at the end of the insular sequence in southern Britain (Burgess 1974, 214). These axes are massive with narrow mouth, deep collar and trapezoidal blade with broad edge. The mouth is square or sub-rectangular with the long axis at right angles to the edge, a feature also characteristic of Armorican socketed axes. Up to four horizontal ribs may be present below the collar; plain axes are known but complex ornament is common, usually comprising vertical ribs with pellets and ring-and-dot motifs. The type is known after the Sompting hoard (223) which contains a full range of forms (Burgess 1967-70, 268) as well as two linear-faceted axes; rib and pellet ornament is common on linear-faceted axes (see p. 232) and relates them to Sompting axes. Ornament as well as form can relate Sompting axes to Armorican socketed axes (*ibid.*, 269, n. 9; Briard 1965, 247, figs. 89; 93, 9-13; Briard and Verron 1976b, 47). The hoard from Tilshead, Figheldean Down, Wilts. (Salisbury and South Wiltshire Museum, Salisbury, Annual Report, 1971-72, 16, pl. 1), contains axes close in form to Armorican axes but probably Wessex products, cf. the Wessex concentration of Armorican socketed axes in Britain (see p. 236). Certain decorative motifs on Sompting axes are specific to certain areas of Britain (Burgess 1967-70, 271, fig. 2).

The origin of Sompting axes may have been in East Anglia (*ibid.*, 269, n. 13) where rib and pellet ornament occurs on LBA3 axes. Sompting and related axes are found through most of Britain and in Ireland but their distribution is predominantly south-eastern with the main concentrations in the lower Thames valley and in East Anglia (*ibid.*, fig. 2). Typological evidence suggests a LBA4 date for developed Sompting axes and this is confirmed by finds in the Cardiff (217), Llyn Fawr (218) and Sompting (223) hoards.

Burgess has claimed to identify several Sompting axes as exports (*ibid.*, 270). The first are in the MV hoard from Bergen, Rügen island, Mecklenburg (Sprockhoff 1941, Taf. 53, 9-10); Butler also regards one of the axes in this hoard as western (1963a, 94) and at least one may be related to the Sompting type (see p. 166). The axe in the Challans hoard, Vendée (Eygun 1957, pl. 4, 11) is probably of East Anglian origin (see p. 163) and may belong to the LBA3 form which influenced Sompting axes. Briard and Verron (1976b, 39) have defined a French type trapézoïdal which may be related to the Sompting type, the illustrated example is from a Bronze Final III hoard which also includes an Armorican socketed axe. In Belgium large axes with long ribs ending in pellets found in the Scheldt valley may be related to the Sompting type and be of LBA4 date (see pp.

Sompting axes demonstrate the continuation of axe production in southern Britain during LBA4 with regional variants.

Armorican socketed axes. LIST 228. MAP 77

Armorican socketed axes are common in museums in north-western Europe and often lack reliable provenance. These axes are invariably looped and are between 5.0 and 12.0 cm long with a narrow blade, straight or slightly expanded sides and rectangular section. The mouth is square or rectangular with the long axis at right angles to the edge of the blade; all but the smallest forms have a shallow collar, sometimes with one or more horizontal ribs below. Ornament of vertical ribs, pellets and rings may be present. Armorican axes are made of thin metal; common retention of the clay core, lack of finishing, internal extension of the socket to the very edge of the blade and high lead content in some examples all suggest that they were non-functional. Several typological groups have been established (Briard 1965, 247-271; Briard and Verron 1976b, 41-44, 47-60) which it is unnecessary to enumerate here.

Though British writers have often referred to these axes as 'Breton' (Burgess 1967-70, 269 n. 9), the term 'Armorican' is correct for these axes occur in large numbers in lower Normandy as well as in Brittany (Briard 1965, 241-242; Verron 1976a, 596). From Brittany more than 220 hoards have produced over 22,500 axes (Briard 1976, 571) and the Norman département of Manche has produced 97 hoards containing more than 14,000 axes (Verron 1976a, 596); the other two départements of lower Normandy, Calvados and Orne, have produced 517 axes, 469 from hoards (*ibid.*). Outside Armorica finds are comparatively very rare.

Associations with other objects are rare for hoards usually contain Armorican axes exclusively and others may contain residual objects. The presence of small numbers of Armorican axes in Carp's Tongue hoards suggests that they appeared during Bronze Final III (Briard 1965, 275; Verron 1976a, 594); not all these finds are convincing, e.g. the Orglandes hoard, Manche (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 199, fig. 22) is preserved only in part, but there is a single Armorican axe in the large LBA3 hoard from Longy, Alderney (Kendrick 1928, 62, pl. VII), and the smaller hoard from Mainlands, St. Lawrence, Jersey, contains five Armorican axes alongside a majority of LBA3 types (Hawkes n.d. (1937) 106, pl. VIII). The Lille Museum hoard (226) may be transitional from LBA3. The apparent independence of Armorican socketed axes suggests that they are characteristic of a phase subsequent to Bronze Final III in north-western France (Briard 1965, 282, 298-299; 1976, 574). The large hoard from Saint-Bugan en Loudéac, Côtes-du-Nord (Briard 1965, 305 no. 52), also contained a fragment of a bossed bracelet of Hallstatt date (*ibid.*, 275, fig. 104, 3) and other hoards include contemporary bracelets with incised ornament (*ibid.*, 271-275, fig. 104, 1-2). Confirmation that Armorican axes were current during LBA4 is provided by the new hoard from Danebury, Hants. (Cunliffe and O'Connor 1979), which contains a fragment probably of Tréhou type with two Ha C razors (Lists 264, 2; 268, 1) and Sompting axes. The hoard from Kerléonet en Spézet, Finistère (Briard 1965, 312 no. 271), was contained in two sheet bronze vessels, one of which has been reconstructed to resemble a situla of Meppen-Gladbach form (*ibid.*, 245-247, fig. 87, 3; Kimmig 1962-63, 38 no. 17, 48, Taf. 26) which should be of early La Tène date (*ibid.*, 44), though Kimmig has suggested that this vessel

may have been a bucket of Kurd or Irish-British type (*ibid.*, 63 n. 52). Charcoal from a *foyer* adjacent to the Saint-Bugan hoard gave a C14 date of 570 ± 110 bc Gsy 42 (Coursaget and Le Run 1966, 136); Briard (1965, 275) quotes a slightly different date. Reliable evidence for the later currency of Armorican socketed axes is thus lacking but it is possible that their use was prolonged into the La Tène period.

The distribution of Armorican socketed axes outside north-western France is widespread but sparse (*ibid.*, 275-282, figs. 106-107); many isolated finds are of dubious provenance and details of hoards may be scanty. List 228 cannot be an exhaustive catalogue but only a summary of published surveys. In north-eastern France there are small concentrations of Armorican axes in the lower Seine and Somme valleys (*ibid.*, fig. 106); hoards are found as far north as Nord but there is none from the Paris area. Immediately to the south-east of the main production area, in Anjou, about forty Armorican axes are known (Cordier and Gruet 1975, 260), a proportional decline similar to that observed to the east. A few examples are known from Belgium and the southern Netherlands. Tackenberg has listed finds from north-western Germany (1971, 48-50, Liste 29) but his identifications are not always reliable (*ibid.*, Liste 29, 7, Taf. 18, 4-6; see p.171). Further east Armorican axes appear to have been found as far away as Poland (Briard 1965, 280-282, fig. 107; Kostrzewski 1915) in the Chrzypsko hoard, Prov. Poznań.

British finds are most common in the south-east (Dunning 1959) but hoard finds are concentrated in Wessex which may reflect a route from Brittany or the Cotentin peninsula. Finds on two Early Iron Age settlement sites may be significant, especially the two examples from the coastal port of trade on Hengistbury Head, Hants. (Bushe-Fox 1915, 62, pl. XXX, 12; B. W. Cunliffe), also the example from All Cannings Cross, Wilts. (Cunnington 1923, 119, pl. 18, 3).

Non-functional, unlike most other Bronze Age tools, Armorican axes may have been made for the value of their metal content and the hypothesis that the different types represented denominations of weight or value is attractive, if unproven (Briard 1965, 270-271). However, all bronze objects would surely have retained the value of their metal content and the tiny percentage of Armorican axes found outside Armorica does not suggest that their value was regarded highly outside their area of origin or that they were "an emergency metal supply" to Britain in face of Hallstatt pressure (Burgess 1974, 213). Armorican socketed axes were certainly current during LBA4 and the presence of hoards in north-eastern France and southern England is another index of the continued use of bronze at this time.

Nordic socketed axes

There appears to be no certain example of a Nordic socketed axe from western Europe with a date later than MV. Coles (1959-60, 52, 67 no. 17, fig. 4, 10) illustrates an axe, in Montrose Museum, which may have a Scottish provenance. This axe probably belongs to Baudou's west Nordic form of small unlooped axes with plain collar and bell-shaped facets on the faces of the blade; this is a widespread Nordic type with few associations which probably belongs to MV and MVI (1960, 24, Taf. VI, VII C2b, Karte 14). A few examples

are known from north-western Germany (Tackenberg 1971, 26-27, Liste 8, Karte 8) and one said to be from Kent is in the Museum für Völkerkunde, Berlin (Baudou 1960, 24).

Iron socketed axes

Apart from the example in the Oss burial (231), iron socketed axes are absent from securely-dated Early Iron Age contexts in Britain, north-eastern France and the Low Countries. A hoard from Lower Saxony indicates production during MVI; this find from Barsinghausen, Ldkr. Hannover (Jacob-Friesen 1974, 424-426, Abb. 425-434), contains six socketed axes, three bronze and three iron, five Wendelringe, four bronze and one iron, and one bronze bracelet. British examples of iron socketed axes have been reviewed by Manning and Saunders (1972); stratified finds are rare and may be as late as the first century A.D. (*ibid.*, 281), but several examples come from sites which have produced Late Bronze Age or Early Iron Age material: Cold Kitchen Hill, Wilts., and Traprain Law, E. Lothian (*ibid.*, nos. 4, 11, figs. 3-4), or from stretches of river rich in finds of these periods: Thames at Sion Reach, Brentford, Middlesex, and Bann at Toome Bar Ford, Co. Antrim (*ibid.*, nos. 8, 15, figs. 405). The unlooped axe from the Rath of Feerwore, Turoe, Co. Galway (*ibid.*, no. 20, fig. 5), is unlooped and similar in form to the axes from Oss and Barsinghausen. Other unlooped examples are from the Seine at Paris (*ibid.*, 279, fig. 5, c). Scheldt at Schoonaarde, E. Flanders (Desittere and Weissenborn 1977) 57-59 no. 125, fig. 63), and Appels, E. Flanders (*ibid.*, 58 n. 66). This type is known at Vix, Côte-d'Or, in the oppidum of Mont-Lassois and in the burial at La Butte, Sainte-Colombe (Joffroy 1960, 99-100, pl. 32, 12). Iron socketed axes were current throughout the Iron Age (Jacobi 1974, 32); the Oss example must be one of the earliest in western Europe and some of the other unlooped examples may be of Hallstatt date.

Stone shaft-hole axes. LIST 229. MAP 78

While stone shaft-hole axes do not appear to have been common in Britain after the Early Bronze Age (Roe 1966, 228), they are known during the Late Bronze Age and early Iron Age in central and northern Europe (Baudou 1960 47-54, Taf. IX-X; Hoof 1970, 104-107; Brandt 1973; Tackenberg 1974; 1976; Eggert 1976, 52). There are several typological classifications for these continental axes but none is comprehensive.

The most characteristic form is that with a recurved butt known as nackengebogene Axte (Aberg 1916; Brandt 1973; Tackenberg 1974, 13-30, Liste 1-4, Karte 104). Dutch finds are known after an example from Baexem, Limburg (Bursch 1940; Modderman 1964b, 69; Butler 1969, 85, afb. 39; de Laet 1974, 289), and their distribution (Map 78) is taken from details kindly supplied by S. H. Achterop of Assen. Baexem axes are broadly equivalent to variant 1b of Brandt (1973, 6-11, Abb. 1, 4, 6-8; 2-3; 4, 1, 4; Karte 2) and variant 1 of Tackenberg (1974, 13-16, Liste 1, Karte 1). The most characteristic feature of these axes is a well-defined collar around the shaft-hole; the axes are curved in profile with an asymmetrical butt and parallel-sided blade, usually with an expanded edge. Outside the eastern

Netherlands these axes are found west of the Weser and north of the Ruhr in western Lower Saxony and Westphalia. There is one example from the lower Scheldt and one from the lower Thames (List 229).

Brandt includes seven Dutch axes in his form 1c (1973, 11, Abb. 4, 2, 5, 6-10, Karte 3), straighter than 1b and more nearly symmetrical in profile; there is a total of nineteen Dutch finds (S. H. Achterop). This form is also most common in Lower Saxony and Westphalia. Axes of Brandt's form 2a have the shaft-hole projecting only on the convex side of the axe (*ibid.*, 40 no. 166 though this is really a Baexem axe (S. H. Achterop)), while Tackenberg includes two in his equivalent variant 2 (1974, 16-18, Liste 2, 1-2, Karte 2). This form is most common in Lower Saxony and rare west of the Ems. Brandt's forms 2b and 3 have a more easterly distribution and are absent from the Netherlands (1973, 16-17, Abb. 7, Karte 5). There is a total of four Dutch finds of form 2a and 2b (S. H. Achterop).

Rare associated finds give dates from MIV to MVI, Ha B to early La Tène, for nackengebogene Axte (Brandt 1973, 26-28; Tackenberg 1974, 25-16; 1976, 36-42); two examples, one the Baexem axe, have remains of bronze in the shaft-hole (Brandt 1973, 26-29; Tackenberg 1974, 15).

The second characteristic Dutch type of stone shaft-hole axe is the Muntendam type (Achterop 1961; Butler 1969, 85; de Laet 1974, 289), short, with rectangular blade and tapering butt, not strictly nackengebogene Axte (Brandt 1973, 30 n. 40), but closely related. Muntendam axes are common in eastern Drenthe and Groningen (Achterop 1961, fig. 2) and there is a related example from the Scheldt at Schoonaarde, E. Flanders (Lecomte 1975, 165, Abb. 3). Tackenberg includes Muntendam axes in his variants 3 and 4 (1974, 18-25, Liste 3, 1-15; 4, 1-6, Karte 3-4) widespread between the Elbe and the Rhine and the Dutch example constitute an extension of the north-west German distribution (*ibid.*, 29; Brandt 1973, 30 n. 40). The eponymous Muntendam axe was found near Late Bronze Age /Early Iron Age pottery (Achterop 1961, 132-133).

Another form of shaft-hole axe, with a domed butt, occurs in western Lower Saxony and in the Netherlands (Tackenberg 1974, 26-27, Liste 6, Karte 7). The axe from a cist in the Pentlands, Midlothian (Roe 1966, 229, 242 no. 399, fig. 8, C), may be related to a form most common in eastern Lower Saxony (Tackenberg 1974, 32-34, Liste 8, Karte 8). Two Dutch shaft-hole axes bear traces of iron (Hodderman 1964b, aff. 1; 3).

The distribution of these late stone axes shows that north-western Germany and the eastern Netherlands shared types absent from the Nordic area (Brandt 1973, 30-31). Tackenberg interprets these stone axes as the common wood-working tool in areas poor in bronze implements (1974, 48-49). This may explain the absence of ground stone axes from contemporary contexts in Britain and northern France, though it should be noted that fragments of three perforated axe-hammers were found in the crannog at Barmston, Yorks., which has produced C14 dates of: 1010 ± 150 bc BM-122 and 940 ± 150 bc BM-123 (Varley 1968, 14, 24) and a sherd resembling Wessex furrowed bowls (*ibid.*, 24, fig. 11; Harding 1974, 130).

Socketed leather-working knives. LIST 230.

Socketed leather-working knives constitute Roth's type IV (1974, 38). The Cardiff hoard (List 230, 1) shows that they were current during LBA4; these four examples have the socket differentiated from the blade, like the knives from Staffordshire and Mildenhall (List 230, 2-3) and the example in the Bronze Final III Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 21 no. 110, pl. 12; Roth 1974, 47). The other knives of type IV quoted by Roth (ibid., 46, IV 3-4; Smith 1920, fig. 50, a-b) have no differentiation between blade and socket and the second appears to be a "fully-socketed chisel" (see p. 174).

The Prairie de Mauves hoard suggests that socketed leather-working knives appeared during LBA3 but they were current in Britain during LBA4 like socketed gouges, which occur in the hoards from Blandford (214), Six-penny Handley (216) and Llyn Fawr (218) in southern Britain, as well as Adabrock (222) in the north.

Heeled socketed sickles. LIST 231

The complete sickles in the two Welsh LBA4 hoards (List 231, 1-2) are all of the same form; they have a socket from the top of which springs laterally the midrib of the blade and the outer edge of the blade continues across the top of the socket to form a 'heel' (Fox 1939, 225). At Llyn Fawr this bronze form is imitated in iron; chronology, typology and technology all indicate that this form is the final development of the Bronze Age sickle in Britain and Ireland. The Scottish and Irish examples (List 231, 3-5) should be contemporary and the French find (List 231, 6) a British LBA4 export suggesting continued use of bronze in north-eastern France at this time.

Other forms of developed socketed sickle may be LBA4 (ibid., 225-226, fig. 9, nos. 14-16, 25, 37, 41) but the developed form was current during LBA3 in the Longy hoard, Alderney (ibid., pl. XXV, 63).

Iron knives. LIST 232

Single-edged iron knives occurred in central Europe during Ha C; most have curved backs, but straight forms are known (Rieth 1942, 31-33). These early knives may imitate late Urnfield bronze knives (Schauer 1971, 202 n. 8) and a few iron blades are known from later Urnfield and MV contexts (Kimmig 1964, 277-278). Iron knives are more massive during Ha D, up to 45 cm long (Rieth 1942, 58-59).

Straight-backed examples are known during Ha C and Ha D in Switzerland (Drack 1972-73, 126-127, Abb. 29-30). The Oss burial indicates a Ha C date (List 232, 1); no other finds survive from barrow 2 at Court-Saint-Etienne (List 232, 2), while Mariën suggests a Ha D date (1958, 108), Ha C may be possible.

WEAPONS

Iron spearheads. LIST 233

A few iron spearheads are known from later Urnfield and MV contexts (Kimmig 1964, 276-277) but they became common only during later Ha C and Ha D (Kossack 1959, 94; Drack 1972-73, 125). A late Ha C date is most suitable for Court-Saint-Etienne barrow 3 (List 233, 2), though all the other exotic material in the Llyn Fawr hoard (List 233, 1) could be Ha C1. It may be possible that the Welsh spearhead is a local iron copy like the sickle so its precise date is uncertain, cf. the Melksham hoard (224).

Joep (1961, 321) has suggested that some iron spearheads from the Thames are of Hallstatt date, but this appears difficult to prove; the apparent absence of swords between the sixth and fourth centuries may have enhanced the importance of the spear (*ibid.*, 324), as the spear appears to have been the dominant weapon in late Hallstatt central Europe (Kossack 1959, 96-99; Schauer 1971, 202 n.8). The same chronological difficulties attend the suggestion that iron spearheads of Ha C date were used in northern Britain (Ritchie 1970, 53).

Hallstatt bronze swords

The fundamental modern study of Hallstatt bronze swords is by Cowen (1967), who reviewed previous work, established a Ha C date (*ibid.*, 377-384) and divided his material into two principal types and three derivative groups. The first principal type, the long Mindelheim sword, is absent from north-western Europe except in iron versions (*ibid.*, 384-391, 424-427; Schauer 1971, 192-198; see p. 246-8). For the second principal type Cowen retained Reinecke's denomination, Gündlingen (1967, 377). The Gündlingen type is distinguished by a pommel-piece, a flat or dished tang, swollen lower down with one to three rivet-holes placed in the swelling; the shoulders are broad and angular with two, four or six rivet-holes. The rivets are slender, their heads sometimes clenched with a distinctive punch. The leaf-shaped blade has an oval section with its edges demarcated by a rib or beading. A narrow pointed rib projects from the top of the blade to the lowest rivet-hole on the tang. A ricasso is usually present. Most examples measure between 70 and 80 cm in length (*ibid.*, 391-395). Cowen's typological subdivision is based on the shape of the pommel-piece (*ibid.*, 401-409, fig. 10). The Gündlingen type is much more numerous and widespread than the Mindelheim type; Cowen recorded two hundred and forty provenanced examples with hoard finds rare, burial finds common in central Europe and water finds in northern Europe and Britain (*ibid.*, 395-401). The distribution of Gündlingen swords stretches from the foothills of the Pyrenees to Finland, from western Slovakia to the Atlantic coast of Ireland, from the Mediterranean coast of France almost to the Arctic Circle (*ibid.*, Map B). Class a1, with a square pommel-tang, is known mainly from southern Germany and Bohemia with a few finds from eastern France; class a2, pommel-tang with slightly converging sides is most common in southern France but spreads through central Europe and north-east as far as Finland and north to the Loire and the Thames (*ibid.*, Map C). Class b, with a low pommel-piece, is the most widespread class;

of all areas where Hallstatt bronze swords occur it is absent only from Finland, Ireland and western France; it is the only class common in the Low Countries, northern Germany and Scandinavia (*ibid.*, Map D). Classes c and d, with cleft pommel-pieces, are confined to Britain and Ireland with only two exceptions (*ibid.*, Map E).

A small number of amendments and additions may be made to Cowen's material. His tentative identification of a Hallstatt sword from the Oise at Pont-Saint-Maxence, Oise (*ibid.*, 438 no. 122), is confirmed as a sword apparently of class b (Blanchet and Lambot 1975, 47 no. 36; Blanchet, Jouve and Durvin 1976, 43, fig. 39, 4). The entry referring to a sword in a hoard from Royallieu, Compiègne, Oise (Cowen 1967, 438 no. 123), refers to the antennae-pommel hilt in the Port Varin hoard (169). The sword from Erondelle, Somme (*ibid.*, no. 125), was associated with two massive penannular bracelets (List 252, 14) and may have come from a burial (Gaucher and Mohen 1974, 113, Erondelle 1; J.-Cl. Blanchet). In addition to the two swords from Paris (Cowen 1967, 438 nos. 118-119; Mohen 1968, 805-907, B64, B66, pls. XII-XIV), Mohen mentions that at least two more come from Paris (*ibid.*, 807); one is from the Seine above Villeneuve-Saint-Georges, Val-de-Marne (J.-P. Mohen). There is a new example of class b from the Seine at Bardouville, Seine-Maritime (Dastugue 1971, 338, fig. 19, 1). N. Freidin kindly informs me of a small, 39.2 cm, Hallstatt sword from Amiens in the Musée de Picardie, Amiens (MP 6623 no. 5), to add to the two listed by Cowen (1967, 438 nos. 124, 126) and Gaucher and Mohen (1974, 108, Amiens environs 9, ill. 45; 117, Picquigny 2). Identifications of uncertain authenticity have been made of swords from Pasly, Aisne (Duval and Buchenschutz 1976, 792), and Pontpoint-Moru, Oise (Patte 1975, 11). Bronze Hallstatt swords from Belgium have been listed by Mariën (1975) without additions to Cowen's list (1967, 438-439), though the fragments in barrow 78 on the Pottelberg, Flobecq, Hainaut, may belong to a Hallstatt sword (Mariën 1958, 235). Burgess (1974, fig. 36) has provided a distribution map of Gündlingen swords in Britain and Ireland which includes some English finds not on Cowen's map (1967, Map B) but these are not identified.

Most Gündlingen swords from north-eastern France come from the valleys of the Seine or Somme. Most Belgian finds come from the cemeteries of the Dijle and Haine valleys. Dutch examples, usually river finds, are concentrated in the Rhine-Meuse area. The British distribution is concentrated in the lower Thames valley with most examples from the river; additional finds are mainly easterly with few from western Britain. Irish finds are mainly from the centre and north-east.

The first derivative group is a Nordic variant first recognised by Sprockhoff; these swords have hilts of Gündlingen form but their ribbed blades resemble those of late Urnfield solid-hilted swords, especially of Mörigen type (*ibid.*, 409-410, 448). Five English swords from the lower Thames valley and estuary with one Dutch sword combine Hallstatt hilts with Ewart Park blades (*ibid.*, 410-412, 449). The third derivative group is the Thames type which Cowen regards as a devolved Ewart Park form incorporating elements of Hallstatt swords, especially the pommel-piece. Outside Britain, where most finds come from the lower Thames valley, this type reaches the

Saône, Brandenburg and Fyn, with a possible find from Ireland (*ibid.*, 412-416, 449-452, Map F).

There are two Thames swords from the lower Seine. One Belgian example comes from the Scheldt but three important additional finds have been made at Han (Mariën 1975, 14-17, HSL 1-3, figs. 1-2). Apart from the Dutch find from Nijmegen, two swords from Millingen, Gelderland (Hulst 1970, XXXII-XXXIII, fig. 11, a-b), appear to belong to the Thames type; both swords have a splayed notched pommel and a swollen tang with the widest point below the centre and their lengths, 56.8 and 56.4, cm appear to be consistent with continental finds of Thames swords. Verron (1976a, fig. 4, 16) illustrates from the Graille hoard (174) a blade fragment with oval section and peripheral ridges. While these are a feature of Gündlingen swords, peripheral ribs appear on three of the four Thames swords from Belgium (Mariën 1975, 37, HSL 2-3, GB, figs. 1; 5; 10, D 3b), and on insular swords of Ewart Park form (Davey 1973, 96, fig. 43, 420-421; cf. Burgess 1974, 213 n. 314).

Stated briefly, Cowen's interpretation of Hallstatt bronze swords is that they appeared in east-central Europe under Thraco-Cimmerian influence. The different classes of Gündlingen swords represent a spread to the west and north which resulted in the appearance of hybrids, composites, the northern variant and the Thames type. The Mindelheim sword was a prestige weapon for more important mounted warriors, while the Gündlingen sword was for warriors of less importance on horseback or on foot (*ibid.*, 416-422).

The Hallstatt bronze swords of southern Germany and Bohemia, Cowen's *Kerngebeit*, have been treated in two PBF volumes (Schauer 1971, 192-215; Novák 1975, 29-31) and Schauer has elaborated a new typology of Cowen's Gündlingen type which has been followed by Novák. Schauer's most numerous type is named Steinkirchen and includes the Gündlingen sword (1971, 199 no. 624); these swords usually have two rivets in the grip and four in the shoulders. Many have pommel-pieces of Cowen's class b and the distribution of Steinkirchen swords is similar to that of class b swords except for the presence of Irish and the absence of Scandinavian finds (*ibid.*, 198-205, Taf. 123A). The Muschenheim type has a single rivet in the tang and two in the shoulders. It includes examples of Cowen's classes a1, a2 and b; and its distribution, mainly central European with southern French and Scandinavian examples, resembles that of class a2 (*ibid.*, 205-209, Taf. 123B). The Lengenfeld type has two rivets in the grip and two in the shoulders; it includes a1, a2 and b swords in equal numbers. Most Lengenfeld swords are from central Europe with two from Scandinavia, one from eastern France and two from Ireland (*ibid.*, 209-211, Taf. 123B). The only Irish swords classified by Cowen belong to the insular classes c and d; the first Irish sword of Lengenfeld type (*ibid.*, 210 n. 6; Cowen 1967, 448 no. 234) is known only from a drawing by Governor Pownoll (1786, pl. XIX, above) and the second (Schauer 1971, 210 n. 7; Cowen 1967, 446 no. 211) has a broken tang. The Weichering type has two or three rivets in the grip and six in the shoulders and includes a1, a2 and b swords. Most examples are from central Europe but finds are also known from north-eastern France, the Netherlands, England and Scotland (*ibid.*, 212 n. 3-7). Schauer considers a south German origin probable (*ibid.*, 211-212, Taf. 122B). He does not specify a possible area for the origin of the Steinkirchen type; the distribution of Muschenheim swords may demonstrate

a link between southern France and southern Germany/Bohemia (*ibid.*, 209). Schauer identifies only eight swords from north-eastern France, the Low Countries, Britain and Ireland and being of Muschenheim, Lengenfeld or Weichering type and certain central European origin (*ibid.*, 207 n. 14; 210 n. 6-7; 212 n. 3-7).

Correlation of Cowen's classes, which are based on the form of the pommel-piece, and Schauer's types, which appear to be based on the configuration of rivet-holes (Table 11), shows that neither system is definitive but that both produce a similar distribution pattern, cf. Cowen's Map C and Schauer's Taf. 123B, Cowen's Map D and Schauer's Taf. 123A. The pattern should be confirmed, it is its interpretation which is open to question.

Table 11

	a1	a2	b
Steinkirchen	2	14	27
Muschenheim	5	8	6
Lengenfeld	2	2	2
Weichering	1	1	2

Cowen presented no detailed arguments about the typological origin of the Hallstatt swords beyond their membership of the great family of flange-hilted swords (1967, 391, 409). He remarked that the ribbing on the blades of Mindelheim swords was a feature only introduced during Ha B and he was more explicit in his derivation from late Urnfield solid-hilted swords of this feature on the northern variant (*ibid.*, 410). The basis of his interpretation is the assumption that the Mindelheim sword was a cavalry weapon; both form and recurrent associations with horse gear justify this. To Cowen, the origin of horse-riding should be reflected in the origin of Hallstatt swords. While horse-gear for draught animals had been known since the early Urnfield period (see p. 149-52), the conventional opinion is that horse-riding did not appear until Ha C. The practice is supposed to have been introduced by "pre-Scythian people" in the Carpathian basin who represent part of that shadowy phenomenon, the 'Thraco-Cimmerians'. Long swords are absent from the equipment of these people; Cowen assumes that the warriors of central Europe took their traditional weapon with them when they adopted horse-riding (*ibid.*, 417-418).

There can be no doubt of the occurrence of horse-gear and swords in central Europe during Ha C and little of the interpretation that this represents mounted warriors. Cowen himself says that Hungarian scholars do not admit a significant pre-Scythian invasion or population movement (*ibid.*, 418 n. 2). This evidence has been recapitulated by Powell (1976, 5-13) and we should remain sceptical about Cowen's conclusions.

When Schauer came to examine the Hallstatt swords of central Europe he, too, could find no conventional explanation of their origin satisfactory. His new proposals (1971, 213-215; 1972a) reverse Cowen's sequence and derive Gündlingen swords from the Thames type with the northern variant also

standing at the head of the sequence. Written in German, these notes have received comparatively little attention from British prehistorians, though such eminent scholars as Mariën have adopted them (1975) and the idea had been foreshadowed by Briard (1965, 205-208). There is still no extensive discussion of Schauer's hypothesis in print.

Finding no predecessors for Hallstatt swords in central Europe, Schauer turned to the west and the Ewart Park series. He listed hoard finds to establish a Carp's Tongue/Ha B3 date (1972a, 261-268), but the important finds are those containing Thames type swords and northern variants. The only British association of a Thames sword recorded by Cowen is in the hoard from Bexley Heath, Kent (Cowen 1967, 414, 450 n. 12; Inv. Arch. GB53), which was long regarded as characteristic of LBA3 and contains no other object of certain Ha C date. The other hoard he lists which contains a Thames sword is from Kirke Søby, Odense Amt, Fyn (Cowen 1967, 452 no. 30; Jensen 1966, 27-28; Broholm 1946, 222, M157). The associated objects are a spearhead and a chisel, both decorated. A MV date is indicated by the spearhead (Jacob-Friesen 1967, 258; Jensen 1966, 30) and the later dates proposed are based on that of the sword, following Cowen (1952, 136-137). Most recently, the MV date has been confirmed by Thrane (1975, 51-52 n. 7).

One sword of the northern variant comes from a hoard: Langsjon, Uppland, Sweden (Cowen 1967, 410, 448 no. 3; Jensen 1966, 40-41). This hoard contained an antennae-pommel sword, a slender tanged sword and a spearhead, but the association of this moor-find is not certain (Stjernquist 1967, 188 no. 21, 189). The antennae-pommel sword is a MV type and only the presence of the northern variant sword caused Sprockhoff to propose a MVI date (1934, 33, Taf. 18, 5; Jensen 1966, 46 n. 48). The tanged sword is also MV (Baudou 1960, 11, 155 no. 27), though he also dates the hoard to MVI (*ibid.*, 326 no. 173). The spearhead is a richly decorated example of the west Baltic type, again MV (Jacob-Friesen 1967, 257-258, Taf. 162, 4), similar to that in the Kirke Søby hoard (*ibid.*, Taf. 162, 1).

To the three Nordic finds of northern variant swords Schauer has added a Swiss find from the R. Zihl (1971, 216 no. 672) and has suggested that the northern variant is really of west European origin (1971, 214). This seems unlikely, for the ribbed blade is not a feature of western swords.

It is clear that, if a Ha C date for the swords discussed above is removed, their associated finds point to Ha B3 and MV. We know that Hallstatt bronze swords are confined to Ha C in central Europe and there are no other hoards finds in Britain. What of the Scandinavian evidence? This has been collected by Jensen (1966) and Stjernquist (1967, 181-190).

There is an interesting sword from Vag, Nordland, Norway (Cowen 1967, 441 no. 160; Jensen 1966, 38 no. 11, fig. 6; Stjernquist 1967, 188 n. 25). This has three pairs of rivets on its tang, unusual but not unique, and bears curvilinear ornament of MV style. This is preserved in a layer of moor-patina, not on remains of a leather scabbard (Jensen 1966, 44). Schauer uses this sword to confirm the appearance of Gündlingen swords during MV (1971, 214; 1972a, 268); it belongs to Cowen's class b and he declares it provincial (1967, 441, 452); Schauer does not include it in any of his central

European types. This is the most northerly find-spot known for a Hallstatt sword (Stjernquist 1967, Abb. 22), being omitted from many distribution maps.

Both the swords from Rasunda, Uppland (Cowen 1967, 442 no. 166; Jensen 1966, 40 no. 17; Stjernquist 1967, 188 no. 19), and Stöndar, Ångermanland, Sweden (Cowen 1967, 442 no. 167; Jensen 1966, 40 no. 20; Stjernquist 1967, 188 no. 22), were found with MV tanged daggers (Jensen 1966, 45; Baudou 1960, 13). The first association is a moor-find and Stjernquist (1967, 189) places little weight on either. Neither sword appears to be of central European origin. North German and Polish finds of Gündlingen swords are, when datable, MVI or later (Jensen 1966, 45); so are the Scandinavian finds of Mindelheim swords (Jensen 1966, 30, 43; Stjernquist 1967, 189-190; Cowen 1967, 388-389).

Schauer uses all this evidence to reverse Cowen's interpretation. For him the Thames type developed during the LBA3 and was exported to central and northern Europe. A related form of hilt was used on blades of solid-hilted origin to form the northern variant. These impressed continental craftsmen who produced the Gündlingen type as a successor to the late Urnfield solid-hilted series and, often using iron, the Mindelheim type as a successor to late Urnfield long swords. The place of the typology of Gündlingen swords within this scheme has not yet been discussed by Schauer. We have the widespread class b/Steinkirchen group, the central European class a/Muschenheim-Lengenfeld-Weichering group and the insular class c and d group. Either class a may have been derived from the Thames type to be followed by classes b, c and d in Cowen's sequence, or class b may have been derived from the Thames type to be followed by class a in central Europe and classes c and d in the British Isles. Our chronological evidence is not sufficiently refined to answer the question and presumptive conclusions must be introduced (Cowen 1967, 409). However, if class a is to be given priority much weight is placed on the two Thames swords present in southern Germany (*ibid.*, 452 nos. 25-26, Map F; Schauer 1971, 215-216 nos. 666, 670).

Since Schauer wrote, an important piece of evidence in support of his hypothesis has been presented by Mariën. He has published three Thames swords from Han (1975, 14-17, figs. 1-2, HSL 1-3). He also illustrates four small bag-shaped chapes from Han (List 161, 18); while these were not found in direct association with the Thames swords, there is no other material of possible Ha C date present at Han to my knowledge and Mariën has no hesitation in dating the swords to Ha B3 and associating them with the chapes (*ibid.*, 33). The notched pommel of the complete Ewart Park sword in the Watford hoard (154) is a characteristic of the Thames type and the blade fragment in the Gravelle hoard (see p. 242) is a 'Hallstatt' feature in a LBA 3 hoard. These finds, together with the Bexley Heath hoard (see p. 244), suggest that the Thames type had appeared during LBA3 as an independent insular invention.

What evidence can be set against Schauer's hypothesis? Study of British and Irish Ewart Park swords is certainly not complete (Burgess 1968a, 28 n96, 43; 1974, 213 n. 314). Burgess (*ibid.*) doubts whether Hallstatt swords of classes c and d could have been produced in Britain by natives, "since they are absent from indigenous contexts". The contexts are presumably hoards,

not numerous during LBA4 in Britain and mostly containing axes and other tools. There is no region on the continent where class c and d swords are common, they are surely insular types. If they were produced by immigrants, why did these immigrants not reproduce in large quantity any other metal item of their material culture? Metal analysis and detailed typological study may provide answers to these problems. Relative chronology may be treated here. Cowen often stresses the existence of an overlap between MV and Ha C which is necessary to accommodate the Kirke Søbby hoard (1952, 137; 1967, 398, 410, 414). If the end of MV can be shown to have occurred by the beginning of Ha C considerable support would be lent to Schauer's hypothesis; this was Baudou's conclusion (1960, 137) and Jacob-Friesen (1967, 85) only admits the exceptions claimed by Cowen. Most recently, Thrane has denied any significant overlap between MV and Ha C (1975, 52, 220, 260). Thus, the Kirke Søbby sword may be removed from Ha C and priority confirmed for the Thames type; the same can be applied to the northern variant. This presents no problems, but Gündlingen swords should really belong to MVI. The associations from Rasunda and Stöndar may be regarded as uncertain or their single associated finds as residual. The Vag sword remains anomalous unless Nordic production of class b swords during MV is to be allowed. Nordic production of class b swords may be presumed and local workshops probably made them over a wide area. The Vag sword may be regarded as a transitional piece.

I am inclined to accept Schauer's hypothesis. There is no obvious origin for Gündlingen swords in central Europe, while their possible predecessors can be found in western Europe in contexts immediately preceding Ha C in date. Writers who employ a model which assumes Ha C immigration or invasion into Britain may find ground for introducing Hallstatt swords in large numbers, but if this assumption is questioned and the swords became isolated as possible indices of alien culture. As Cowen recognised (1967, 416) the acceptance of the Thames type as a product of Ha C influence would necessitate a re-working of the chronology of the end of the British Bronze Age which would bring some LBA3 material into line with a developed phase of Ha C and depress the succeeding LBA4 phase to late Ha C. The re-working has not been done and my own survey indicates that LBA3 was contemporary with Ha B3, not significantly later in southern England, while LBA4 was contemporary with Ha C (see p. 270).

Hallstatt iron swords. LIST 234. MAP 79

Iron swords are characteristic of the beginning of the Iron Age in central Europe though iron blades had appeared on some late Urnfield solid-hilted swords (Kimmig 1964, 275-276). The form of Hallstatt iron swords is similar to that of contemporary bronze swords: long, slightly leaf-shaped blade, pronounced shoulders, swollen grip with organic hilt-plates attached by rivets, sometimes an elaborate pommel. Recent studies of bronze swords have overshadowed the iron type which relies on the work of Rieth (1942, 23-31, 163-169) for central Europe and of Mariën (1958, 255-256) for the Low Countries. Cowen counted nearly 300 bronze swords and "well over 100" iron (1967, 380 n. 6).

There is no definitive classification of Hallstatt iron swords; the latest attempt, by Mariën (1958, 255-256), related iron swords to his own typology

of bronze swords (*ibid.*, 253-255), which was criticised by Cowen for placing emphasis on length rather than form (1967, 380-381). The corroded state of most iron swords precludes a detailed typology based on form and few examples are complete enough to allow a comprehensive classification based on length. Where comparison with bronze swords of specific types can be made this appears to be the best approach. Thus, Cowen describes the long iron sword as a "version of the Mindelheim type" (*ibid.*, 380) and, less distinctive, there are possible versions of the Gündlingen type (*ibid.*, n. 5). The former, as at Oss and Llyn Fawr (List 234, 1, 13), are easily recognisable by their dimensions, blade section or pommel and the long swords from Court-Saint-Etienne barrow 1, Morimoine and Someren (List 234, 3, 10, 14) should also belong to this type. The two short iron swords from Court-Saint-Etienne (List 234, 9) have the broad, angular shoulders of Hallstatt swords and the two short swords from Meer (List 234, 2) should also belong to the short iron type. The attribution of the fragmentary iron swords is less certain. Mariën (1958, 28) suggests that the fragments from Court-Saint-Etienne barrow A (List 234, 4) belong to a long sword and the dimensions of the fragments from barrows L and M (List 234, 5-6) suggest that they are also from swords c. 90 cm long. At least two more long iron swords seem to have been found at Court-Saint-Etienne (List 234, 8). Iron swords at Court-Saint-Etienne and probably in other Ha C burials in the Low Countries appear to have been predominantly versions of the Mindelheim type.

Long Hallstatt swords of iron or bronze have traditionally been regarded as characteristic of Ha C not of Ha D (Rieth 1942, 55-57) and subsequent studies have tended to confirm this (Cowen 1967, 382), though bronze Mindelheim swords may be dated later than Ha C in Scandinavia (Schauer 1971, 197-198). Kossack dates the appearance of iron swords to Ha C1 and they continued into Ha C2 (1959, 17, 23-24, 38, 48; 1970, 113), though he suggests that one iron Mindelheim sword was present in a later context at Etting, Ldkr. Weilheim, Bavaria, where barrow 8 in a cemetery otherwise of Ha D date produced an iron sword (1959, 18, 234-235, Taf. 101, 1). Peroni places iron swords in Ha C1 and Ha C2 at Hallstatt (1973, 34, fig. 2, 1).

Iron swords are more common than bronze in Bavarian burials with horse-gear, Kossack's group A13 (1959, 17). Mindelheim swords are known in bronze and iron in approximately equal numbers, whereas Gündlingen swords must be much more numerous in bronze than in iron. Warriors buried in richer graves seem more likely to have had a sword of the new material than their poorer comrades and the prestige weapon, the Mindelheim sword, was more often made of iron than the standard weapon, the Gündlingen sword (Schauer 1972a, 270).

While the distribution of bronze Mindelheim swords is confined to central Europe and Scandinavia with a single French find (Schauer 1971, 198, Taf. 122B), iron Mindelheim swords occur in central Europe and in eastern and southern France (Rieth 1942, 163-169, Karte; Ward-Perkins 1940, 47-48, fig. 5), though not in northern France (Duval and Buchenschutz 1976, 790). In Belgium iron was as common as bronze for the manufacture of swords during Ha C (List 234, 2-12; Cowen 1967, 438-439), while bronze was predominant in the Netherlands, north-eastern France and Britain. At Morimoine, Oss and

Meerlo (List 234, 10, 13, 15) warriors with long iron swords also had iron horse-harness. This emphasises the importance of Belgium, especially Brabant, which includes Oss, during Ha C. There may be an iron sword at Wijchen (232).

The Hallstatt iron swords of eastern France have recently been discussed by Wamser; they outnumber Hallstatt bronze swords by more than six to one in burial finds (1975, 25, 162, Tabelle 1) and, save one peripheral example, exclude them completely from Burgundy (*ibid.*, 68). Where length can be established, most of these Burgundian swords are long, 95 to 105 cm, the shorter examples probably being imports from the Jura (*ibid.*, 68-69). Wamser suggests that the short iron sword from barrow 1, Nermier, Jura, is of late Urnfield date because of its association with Ha B2/3 pottery (*ibid.*, 26-27, 146 no. 609, Taf. 2, 3-5, 7; 3, 2); some Gündlingen swords are found in transitional late Urnfield/early Hallstatt contexts and some may be of late Urnfield date (*ibid.*, 100). Long iron swords are dated to Ha C2 (*ibid.*, 61, 86, 88-89, 91, Tabelle 12).

Antennae-pommel iron swords. LIST 235

Rieth dated antennae-pommel iron swords to Ha D (1942, 55, Abb. 40). This type is widespread in central and south-western Europe, with blades of varying length. Discussing the south-western finds, Schüle has stressed that it appears during Ha C (1960, 19). The burial from Sesto Calende, Como, is of seventh-century date (Frey 1969, 47-50) and short antennae-pommel swords probably appeared during Ha C2 at Hallstatt (*ibid.*, Abb. 27; Peroni 1973, 36, fig. 5, 2-3). A Ha C2 date is probable for the Court-Saint-Etienne sword (List 234, 2) and this should also apply to the London sword (List 235, 1), surely an import from central Europe or eastern France (cf. Drack 1972-73, 121, Abb. 2; Wamser 1975, 30, Taf. 3, 3). The French distribution of iron antennae-pommel swords is southerly, like that of long iron swords, but with more finds in the south-west (Ward-Perkins 1940, 42, fig. 3). The single antennae-pommel iron sword from England seems unlikely to have been the precursor of socketed swords as Moore and Rowlands (1972, 32 n. 47) claim on the basis of the Whittingham sword (see p. 189). The London antennae-pommel sword is a distinctive import but does not appear to have influenced insular production; it should have been imported towards the end of LBA4.

Hallstatt chapes. LIST 236

A variety of distinctive chapes has been found associated with Ha C swords and horse-gear (Kossack 1959, 17-18; Schauer 1971, 225); they are distinguished by wings, swept-back, straight or recurved and their typology is based on that of Kossack (1959, 285-286, Taf. 151). Details have been provided by Mariën (1958, 44, 50, 184) of finds from the Low Countries, by Eogan (1965, 168-176) of Irish finds and by Cowen (1967, 453) of British finds. Schauer has listed examples from southern Germany and recapitulated evidence from elsewhere (1971, 217-225).

The distribution of Hallstatt chapes reflects that of Hallstatt bronze swords; it is concentrated in central Europe with other groups in southern France, the Low Countries, Britain and Ireland and the Nordic area.

The most widespread forms are the chapes with swept-back wings of Prüllsbirkig and Büchenbach types (*ibid.*, 217-219) while the forms with recurved wings, wings, the Beratzhausen, Oberwaldbehrungen and Freihausen types (*ibid.*, 221-224) are largely confined to central Europe (*ibid.*, Taf. 127A-B). There is no specifically insular form; the most common form in England, Belgium and the Netherlands (List 235, 1-4, 7, 13-16) is the Prüllsbirkig type, while the most common Irish form is the Büchenbach type (List 236, 10-11). It would be unwise to assume that a single production centre existed (*ibid.*, 218); Schauer suggests a south German production centre for most types with a possible insular centre for the Neuhaus type (*ibid.*, 221). The possible typological connection between small bag-shaped chapes of LBA3 and Hallstatt chapes should be noted. The concave mouth defined by a rib and the bead defining the base are shared by bag-shaped chapes and most Ha C chapes and there are forms intermediate between bag-shaped chapes and the Neuhaus type at Court-Saint-Etienne and Lough Gur (see p. 190).

Iron daggers. LIST 237

Daggers replaced swords as a major weapon type in central Europe during Ha D (Rieth 1942, 39-54) though daggers were much less numerous than swords had been during Ha C and they were found alongside single-edged knives in some cases (Kossack 1959, 94). These daggers can be divided into two types by the construction of their sheaths: wire-bound sheaths belong to Ha D1 and sheaths with spherical chapes belong to Ha D2 (*ibid.*, 95).

A small but distinctive group of related daggers from the lower Thames valley has been studied by Jope (1961). The early members of this group, which is characterised by twin-loop suspension, have wooden sheaths secured with lateral bronze bands. On only one example is the hilt preserved: Mortlake 1 (List 237, 3) has a straight pommel and hilt-guard like a series of south German Ha D daggers (Rieth 1942, Abb. 34) and a swollen grip like the Haps dagger (List 237, 8). Battersea 1 (List 237, 1) probably had a chape of crescent- or anchor-shape like the example from Niederraunau, Ldkr. Krumbach, Bavaria (Kossack 1959, Taf. 18, 10) which is dated to the beginning of Ha D1 (*ibid.*, 22). The Haps dagger (List 237, 8) with its globular chape should be of Ha D2 date (Verwers 1972, 62) and this late Ha D date has been followed by Drack (1972-73, 122, Abb. 3, 1; 10) for a fine example found in 1962 between Estavayer-le-Lac and Font, Fribourg, though Jope (1961, 211) has suggested that the dagger with a globular chape in barrow 2 at Etting, Ldkr. Weilheim, Bavaria (Kossack 1959, Taf. 102, 1-2), may be of Ha C1 date. Daggers with globular chapes are most common in Württemberg (*ibid.*, 95). The construction of the sheath of the Luttre dagger (List 237, 7) indicates that it was made in the lower Thames valley.

These Thames daggers seem to have been derived from southern Germany (Jope 1961, 309) perhaps early in Ha D, though intermediate finds are scarce. In France comparable daggers reached only as far north as the Marne (Rieth 1942, 175; Jope 1961, 312, fig. 2, right) at the very end of the Hallstatt period (Hatt and Roualet 1977, 10, pl. V, 22-24), but slender daggers derived from forms of the Hallstatt/La Tène transition were subsequently produced in the lower Thames valley (Jope 1961, 312-316), so the early Thames daggers (List 237, 1-7) may be regarded as EIA1 products.

Bronze arrowheads. LIST 238

A series of bronze arrowheads, often known as "Scythian" in central and western Europe, is spread from the Steppes to the Atlantic and from the Mediterranean to the Baltic. The most characteristic form is socketed and trilobate. The arrowheads from Bures, Saint-Denis-le-Ferment, two from Turnhout and most in Laon Museum (List 238, 2-3, 6) are triangular in profile, while those from Mount Batten and Schaerbeek (List 238, 1, 7) are biconical. The Méru arrowhead (List 238, 4) is barbed and tanged with lozenge-section blade and round-section tang. The biconical trilobate form is known in a late Hallstatt burial at Chatel-Gérard, Yonne (Kleemann 1954, 122, Abb. 2, e). Trilobate arrowheads occur in Greece between the seventh and fifth centuries (Snodgrass 1964, 148-154, fig. 10, 2B3, 3B5, 3C2); the barbed and tanged form (*ibid.*, 147, fig. 9, d1) and the quadrilobate form (*ibid.*, 154), known from Turnhout (List 238, 6), both have wider date ranges.

Sulimirski (1961, 796) has proposed that all such arrowheads found in western Europe are the result of raids by the Scythians or allied peoples; he dates the trilobate biconical arrowheads to the late sixth century and the tanged arrowheads to the fourth and fifth centuries. Trilobate arrowheads were in use in the Russian Steppes from the seventh century onwards but the forms illustrated by Smirnov and Petrenko (1963, pls. 12-13) and Melyukova (1964, pls. 6-9) have bullet-shaped profiles unlike any forms of trilobate arrowhead found in north-western Europe. This bullet-shaped profile is also dominant among the Scythian finds in Transylvania and the Carpathian Basin (Parducz 1973, 59-60) but probably appeared in these areas no earlier than c. 560 B. C. (*ibid.*, 44 n. 58, 52). The western examples may be related to Greek rather than strictly 'Scythian' forms. The distribution of 'Graeco-Eurasiatic' arrowheads in Europe shows two groups (Kimmig and Gersbach 1971, Abb. 12): the first, eastern, centred on the Carpathians, and the second, western, centred on the Rhone valley. The Greeks, with colonies on the Black Sea and at Massilia, were probably responsible for the introduction of these arrowheads into western Europe (*ibid.*, 52). The date of isolated finds is uncertain; a recent dated find from the Heuneburg is Ha D2 (*ibid.*, 49) and such a date is acceptable for finds further north.

Iron arrowheads. LIST 239

Iron arrowheads appear to have been less common than bronze during the Early Iron Age, though a variety of forms is known, tanged, socketed and plain. The date of these arrowheads appears to be predominantly Ha D (Rieth 1942, 63-64; Drack 1972-73, 126) and the two Dutch finds agree with this chronology: Haps burial 190 (List 239, 1) should be Ha D2 because of its dagger and the Havelterberg burial (List 239, 2) is dated to Ha D by its Ruinen-Wommels I pot (Verwers 1972, 60).

VESSELS

Buckets. LIST 240. MAP 80

Two Kurd buckets of Ha C date are known from the Netherlands. The first is from the Oss burial (List 240, 1) and the second from Baarlo (List

240, 3), also from a burial. The form of the Baarlo bucket and the ornament of its strap-handles confirms its Ha C date (von Merhart 1952, 33; Kimmig 1962-63, 86-87).

The Ede bucket (List 240, 2) also contained a cremation burial. The form of its shoulder suggests a Hallstatt date and the looped handle-attachment relates it to von Merhart's group of situlae with ribbed shoulders (1952, 35-38, 70-71, Taf. 21, 6-11; 22); this form is common at Hallstatt (Kimmig 1962-63, 87; Peroni 1973, 28, fig. 3, 29) though ribs are rarely present on the shoulder (Kromer 1959, Taf. 115, 4). The best comparison appears to be a vessel in a Bylany culture burial from Bohemia, burial 2 at Rvenice (Pleinerová 1973, 296-298, Abb. 6); apart from its larger size, this vessel appears to differ from the Ede bucket only in having a two-piece body. The burial is dated to the Ha C/D transition. A similar vessel from Dobřany, Bohemia, has the typologically later folded base-plate (*ibid.*, 297, Abb. 15). The Ede bucket was probably a product of Bohemia, cf. the east Hallstatt situla with decorated body and folded base-plate from the Rhine at Köln-Riehl, Rhineland (Kimmig 1962-63, 87, Taf. 48).

The use of bronze vessels in cremation burials in the Netherlands may represent a continuation of the tradition already established by the use of MV vessels (see (201)). Hallstatt and early La Tène situlae contained cremation burials in northern Europe, the middle Rhine area and France (*ibid.*, 95-96, Abb. 13) as far west as Brittany (*ibid.*, 61-63; Schwappach 1969, 248-251). Two cremation burials of early La Tène date in the Netherlands may be noted. The first, in the same region as the Hallstatt burials with bucket, is from Overasselt, Gelderland, where the vessel is of conical profile, one-piece body, angular shoulder with rim rolled over an iron ring; two pairs of bronze bands soldered onto the neck are the remains of looped handle-attachemnts; the base-plate is soldered onto the body (den Boesterd 1956, 38 no. 111, pl. V; Kimmig 1962-63, 57, Abb. 7; de Laet 1974, 402). This vessel contained burnt bones, remains of horse-gear and a small bronze cup and is similar to early La Tène situlae containing cremation burials in north-west Germany (Kimmig 1962-63, 56, Taf. 43-44). The second vessel contained a cremation in the centre of a ring-ditch at Meppen, Drenthe (van Giffen 1938a). Only the upper part of the vessel survived, in fragmentary condition; it has a high angular shoulder with short, inturned neck, thickened, with a slight bead at the rim; of the handle-attachments there remain only two pairs of iron rivets which appear to have held oval plates (Kimmig 1962-63, 48-49, Taf. 29, 1; 38, 2). The Meppen situla appears similar to a vessel from Gladbach, Kr. Neuweid, Rhineland (*ibid.*, 38 no. 17, 47-48, Taf. 26, 2, Abb. 3), which also contained a cremation burial. The construction of the Meppen situla, seamless from a single sheet, relates it to late Hallstatt cauldrons but the handle-attachment is characteristic of Rhenish situlae and iron rivets were used only on La Tène vessels. The Meppen situla was probably a product of the same workshop on the middle Rhine.

Ribbed pails. LIST 241. MAP 80

The Weybridge pail (List 241, 1) belongs to Stjernquist's standard type with internally rolled rim and a single broad rib on the base which has narrow ribs around a central punt; its volume and proportions place it in a small

group, the Hallstatt variant (Stjernquist 1967, 70-71). The other examples of this variant are from Gommeville, Côte-d'Or; Hallstatt, burials 769 and 910, and Nocera dei Pagani, Campania; pails of the standard type with internally rolled rim are concentrated in Hungary and the eastern Alps (*ibid.*, Abb. 12). The standard type is dated almost exclusively to Ha D (*ibid.*, 72-74); Hallstatt burial 910 is of Ha C date but ribbed pails are among the types whose attribution to specific burials may be uncertain (see p. 36).

The fragments in the Wijchen burial (List 241, 2) represent a pail of a form otherwise confined to the upper Adriatic coast and dated from Ha B3 to Ha D but probably earlier than the Weybridge pail. The recognition of the ribbed pail in the Wijchen burial means that it is no longer justifiable to use the pail in the early La Tène burial from Eigenbilzen, Belgian Limburg (Inv. Arch. B6; Stjernquist 1967, I, 90-83, II, 32 no. 52, Taf. XII, 3), to suggest an early La Tène date for the Weybridge vessel (Harbison and Laing 1974, 10-11) and the Wijchen find also suggests that the Weybridge pail was a genuine ancient import.

Miscellaneous vessels. LIST 242

The London cauldron (List 242, 2) is a Ha D type common in west-central Europe with a few examples on the middle Rhine and in Italy (Hawkes and Smith 1957, fig. 12; Kossack 1959, 294, Taf. 155C). There is a comparable example in the Hochmichele, burial VI, Kr. Saulgau, Württemberg (Riek 1962, 173-174, Taf. 8, 146). If this was an ancient import, a route via the lower Rhine seems likely (Hawkes and Smith 1957, 194). This vessel is usually accepted as an ancient import because of its provenance and, perhaps, because of the authority of its publication (Cunliffe 1974, 142; Harding 1974, 141), but more doubt attaches to the other vessels. The Minster fragment (List 242, 1) is from a so-called 'Rhodian' flagon, really Etruscan, a type found in Ha D1 contexts on the middle Rhine (Frey 1964), but with no authenticated finds further north. The Northampton oenochoe (List 242, 3) is also an Etruscan type common north of the Alps (Frey 1969, 114-117; Bouloumié 1973; Harbison and Laing 1974, 21 n. 79) and the association of such a vessel with a Ha D cauldron at Hatten, Bas-Rhin (Frey 1957, Abb. 1-2), indicates pre-La Tène export; the more northerly example from Eigenbilzen (Inv. Arch. B6, 2) is La Tène. The recent find of a fragment of a mould for the handle of an oenochoe of Etruscan type at the Heuneburg, unstratified though possibly of Ha D date, suggests production north of the Alps (Kimmig and von Vacano 1973).

The Ixworth fragment (List 242, 4) has been interpreted as part of a Hallstatt vessel (Ridgeway and Smith 1905-07, 108; Hawkes and Smith 1957, 197), presumably a shallow flanged bowl of the type, common at Hallstatt (Peroni 1973, 30, figs. 1, 32; 6, 22; 7, 18-20), which spread as far as Brittany (Dehn 1971). Ixworth is a suspect provenance and the Northampton and Minster vessels are not so reliably recorded as the Weybridge pail and the London cauldron but each of these vessels could have been a Hallstatt import. Insular cauldrons were still in use during LBA4, as shown by the Llyn Fawr (218) and Sompting (223) hoards, and the London cauldron may represent a continuation of this tradition during EIA1.

Flesh-hooks. LIST 243

The iron trident in barrow 3 at Court-Saint-Etienne (List 243, 2) is usually interpreted as a flesh-hook, though it has been suggested that it might be a goad, but this burial provides no evidence for a vehicle. The Wijchen terminal (List 243, 3) resembles insular knobbed flesh-hook terminals but this interpretation is not certain; a goad might be appropriate in a wagon-burial or the terminal may be just a vehicle-fitting.

The continued use of bronze cauldrons in Britain during LBA4 suggests that flesh-hooks would still have been in use. While flesh-hooks are absent from LBA4 hoards, the Dunaverny hook (List 243, 1) has been interpreted as a Ha C import (Megaw 1970, 51-52; Scott and Powell 1969, 125 n. 3) because of its ornament, which probably represents one pair of crows or ravens and one pair of swans with their cygnets. Jockenhövel (1974a) mentions no continental affinities and the forms of hook and terminal are insular and unlike any continental form (Hundt 1953; 1954). The comparable insular flesh-hooks are from the Eaton hoard, Norwich, Norfolk (Jockenhövel 1974a, 330 no. 10, Abb. 10), the Lulworth hoard, Dorset (ibid., no. 12), and Killeonan, Kintyre, Argyle, (ibid., no. 13; Coles 1959-60, 25, fig. 3; Scott and Powell 1969, 125 n. 3). All have double hooks springing from a transverse bar, the Eaton and Lulworth hooks have the same T-shaped form as Dunaverny, the Killeonan piece has pendant rings. The insular tradition of flesh-hooks is long and characteristic; both the Eaton and Lulworth hooks are in LBA3 hoards. The form of the Dunaverny hook appears entirely insular, even if its ornament is alien. Bird models were known before Ha C in central and northern Europe (Kossack 1954b, 17, Taf. 6, 12, 17, 19; 32, Taf. 6, 11, 25; 34-35, Taf. 6, 2, 10, 15-16; 50, Taf. 6, 1, 23), though later Greek models cited by Powell (Scott and Powell 1969 n. 3; Willemsen 1957, Taf. 40, Br 7872; 61, B 1946; 66 B 1946) are closer stylistically to the models on the Dunaverny hook which need be no later than LBA3; perhaps the birds are secondary additions, though detailed examination would be necessary to ascertain this.

HORSE-GEAR

Hallstatt phalerae. LIST 244

I have discussed elsewhere the Ha C phalerae found in Britain and Belgium (O'Connor 1975). The examples from Llyn Fawr and London (List 244, 1-3) are of the type common in Bavaria and all the loops from Court-Saint-Etienne (List 244, 5-8) could belong to similar types. These south German phalerae are regularly associated with horse-harness and the type with flattened dome may confidently be regarded as items of horse-gear though their exact position is uncertain (Snodgrass 1973, 43).

The Sompting phalera (List 244, 4) belongs to a characteristic form almost exclusive to Hallstatt, dated there to Ha C2, I know of no geographically intermediate example. Horse-gear is rare at Hallstatt where only four graves contain bits (Peroni 1973, 15, fig. 12, 8). German scholars prefer the horse-gear interpretation but the two-stage Hallstatt form resembles that of Aegean objects regarded as shield-bosses by Snodgrass (1973, 47-48). The Sompting phalera is a rare example of eastern Hallstatt influence in western Europe.

Cheek-piece ornaments. LIST 245

This small group of conical objects has been considered under the heading of 'phalerae' (O'Connor 1975, 220, 223) but a more specific function may be suggested. Davey (1973, 86) compared the Osgodby piece (List 245, 1) with conical objects from a burial in the Hungarian Ha C cemetery at Doba (Gallus and Horváth 1939, 47, pl. LXI, 2-3) where a pair of cheek-pieces of Kossack's type Ib each had a bridle-ring and a bridle-hook (Kossack 1954a, 156, Karte 2A, 4; 157, Karte 2E, 3) and a conical object was attached to each bridle-hook. The Osgodby and Court-Saint-Etienne objects, all with bar attachments (List 245, 1, 3), may have performed a similar function. Kossack includes the Belgian pieces in his list of tutuli (1954a, 161, Karte 3, D7), though the German examples of this group have curved bars. Mariën reconstructs the Court-Saint-Etienne pieces as c. 10 cm in diameter, while Kossack's tutuli are c. 4 cm; the Osgodby and Doba cones are c. 10 cm.

The Newark discs (List 245, 2), 8.2 cm in diameter, have central perforations but their conical form relates them to the Ha C objects discussed above. The axes in the Newark hoard (Inv. Arch. GB36, 6-8) are characteristic LBA3 forms with three ribs and the spearheads (*ibid.*, 3-4, 9-11) mostly have a waisted midrib, a common LBA3 form (Burgess 1976b, 86). If the Newark discs are of Ha C date, and I know of no exact parallels, they would provide a rare instance of Ha C objects in a LBA3 context.

Cheek-pieces. LIST 246

Iron cheek-pieces of central European form occur in four burials in Belgium and the southern Netherlands (List 246, 1-4) and the double-link bronze bit in the Wijchen burial (232) probably belonged to a similar bridle. The work of Kossack (1954a) is still fundamental to the study of such horse-gear.

Cheek-pieces of type Ib occur throughout central Europe from Hungary to the Rhine and north to Gotland; the easterly examples were usually of iron, bronze was also used in southern Germany, Bohemia and northern Europe (*ibid.*, 119-120, 156, Karte 2, A, Abb. 23, 1; Mariën 1958, 123). There is a fragment of an iron cheek-piece, probably of this type, from a late Ha C burial in barrow J at Ibos, Hautes-Pyrénées (Mohen 1975, 36, fig. 5, 4). Type Ib appeared during Ha C1 in southern Bavaria as part of Kossack's group AII 1-2 (1959, 18, 23, Taf. 25, 3-6) and continued during Ha C2 (*ibid.*, 265 no. 390, Taf. 139, 6-7) and was a characteristic Ha C form (*ibid.*, Taf. 13, 6). Iron was preferred to bronze in the Low Countries (List 246, 1-3), perhaps reflecting the popularity of iron long swords.

Cheek-pieces with flattened, expanded lower ends, type Ic, are rarer than type Ib (Kossack 1954a, 120, Karte 2, B). The Meerlo examples (List 246, 4) are of iron while the other finds, from Austria and Brandenburg, are of bronze. Associated bridle-hooks have a wider distribution (*ibid.*, 157, Karte 2, E) more like that of Ib cheek-pieces and are often of iron. Ic cheek-pieces are of Ha C date like the bridle-hooks (Kossack 1970, 113 n. 55, Taf. 54, 4a; 43, 7a; Gabrovec 1960, 62, Abb. 3).

Mariën (1958, 35-36) interpreted the winged objects from Court-Saint-Etienne (List 246, 6-7) as cheek-pieces by analogy with the examples in the Ha C burial 2 at Lengsfeld, Ldkr. Parsberg, Oberpfalz (Kossack 1954a, Abb. 24B, 3-4), and this interpretation was supported by examination of the set from Llyn Fawr (List 246, 5) by Alcock (1961). These cheek-pieces are all within the late Urnfield/early Hallstatt tradition of symmetrical cheek-pieces (Balkwill 1973, 447, List 2) and the Welsh and Belgian examples, the La Quenique type, are closely related by their construction, especially the slotted wings. Savory (1976a, 47) has emphasised the differences in detail between the Llyn Fawr and Court-Saint-Etienne cheek-pieces but there is little evidence to support his implication that the Welsh examples were products of western France where cheek-pieces are confined to the northern Pyrenees (Joussaume, Mohen and Tardy 1969, 468, fig. 8; Mohen 1975, 40-41).

Symmetrical cheek-pieces were known in Britain during LBA2 (see p. 149; cf. Britnell 1976, fig. 3B) and the ornamental discs on the Llyn Fawr cheek-pieces may be compared with the motif on Llangwyllog buttons (D. Longley; see p. 199) which suggests that the Llyn Fawr cheek-pieces may have been insular products which possibly influenced the Court-Saint-Etienne cheek-pieces.

The nature of the iron horse-harness in the Ha D Havelterberg burial (G. J. Verwers; Verwers 1972, 60) is unknown to me. There are possible British examples of Early Iron Age horse harness from King's Weston Hill, barrow 2, Somerset (Tratman 1922-25, 239, fig. 2; Balkwill 1973, 448 no. 14), and Wytham, Berks. (Harding 1972, 172, pl. 76, A-B; Balkwill 1973, 446, 450), but these finds are of uncertain date.

Yoke-mounts. LIST 247

These objects, Jochschnallen, are rectangular openwork plates of cast bronze, often made up of small cups. Loops may be present along one side only (Kossack 1954a, Abb. 19A, 45; 19B, 18; 21C, 22-22; 22B, 16-18; 25, 22-24; 26D, 12; 27, 16-19), as at Llyn Fawr (List 247, 1), or some form of attachment may be present along both sides, as at Court-Saint-Etienne and Wijchen (List 247, 3-4). The Staple Howe fragment (List 247, 2) appears to be a cup rather like those on the Court-Saint-Etienne mount.

Finds in situ indicate that these mounts were attached to yokes (Dvořák 1938, obr. 20-21; Mariën 1958, 31-32, fig. 55A). Their distribution is predominantly central European (ibid., 29-31; Kossack 1954a, 124-129, 161, Karte 4, A) and the form to which the examples listed here belong is dated to Ha C1 (Kossack 1970, 111 n. 50). The Llyn Fawr mount has ornamental discs with concentric ribs like those on the cheek-pieces in the same hoard (List 246, 5) and Llangwyllog buttons (see p. 383) which may suggest insular production. Only at Wijchen is there other evidence of a vehicle to complement the yoke.

Concave oval attachments. LIST 248

Concave oval attachments, usually with a central perforation, occur in Bohemia and southern Germany during Ha C (Kossack 1954a, 162, Karte 4, B); when found in situ they are yoke ornaments known as Jochrosetten

(Dvořák 1938, obr. 20-21; Mariën 1958, fig. 55, A-B). Bavarian finds are Ha C1 (Kossack 1959, 18, Taf. 60, 10, Tabelle 1).

Miscellaneous items of Hallstatt horse-gear

Other characteristic items of Hallstatt horse-gear occur as isolated finds at Court-Saint-Étienne. A bar toggle (Mariën 1958, 37-38 no. 116, fig. 4) is of late Urnfield tradition (see p. 196 ; Kossack 1954a, 157-158, Karte 2, G16; 1959, Abb. 14, 5) but the form also occurs in Ha C (*ibid.*, 115, Abb. 24B, 9). Fragments of mounted openwork are reconstructed as headstall-ornaments (Mariën 1958, 63-65 no. 128, figs. 9, 52) a widespread type (Kossack 1954a, 158, Karte 2, H) characteristic of Ha C in Bavaria (Kossack 1959, Taf. 13, 7). The set of iron pendants in barrow 4 (229) may represent late Urnfield tradition (see p. 214) but the use of iron suggests a Hallstatt date; similar triangular iron pendants occur on rings pendant from linch-pins at Hradenín, Bohemia, Ha C (Dvořák 1938, obr. 13, 4).

ORNAMENTS

Saint-Vincent pins. LIST 249

The Saint-Vincent cemetery has produced two iron pins with bent shafts and hollow, oval, two-piece heads (List 249, 1); two pins of similar form, but with iron shafts and bronze heads, occur at Oss (List 249, 2).

Mariën (1964, 155-156) cited Nordic pins as comparisons. These pins have straight iron shafts and bronze heads, iron heads are exceptional (Krüger 1961, 42 n. 170), and are known as Bombenkopfnadeln, not to be confused with the late Urnfield bronze pins of this name (see p. 203). They are characteristic of the Early Iron Age in northern Germany and northern Poland: in the west they belong to phases a and b of the Jastorf culture (*ibid.*, 42-43); in the east they belong to Keiling's phase Ic, equivalent to Jastorf b (1969, 16, 47-48, Abb. 1, Taf. 70); in Holstein they occur in Hingst's phases Ib2 and Ic1 (1959, 113, Abb. 17a, 42-43). This represents a chronological range from the end of Ha D into La Tène C (Jacob-Friesen 1974, Abb. 374). The origin of these pins lies in central Europe during late Ha D (Hingst 1974, 70; Sangmeister 1969, 157, a3 no. 30, 165, 168, 177, Abb. 3-5; Aufdermauer 1964, 42-43).

These comparisons are not satisfactory; all the Nordic pins have straight shafts, unlike the Saint-Vincent pins, and the late Ha D-La Tène chronology is too late, certainly for Oss and probably for Saint-Vincent (Mariën 1964, 162). Bent shafts appear in earlier contexts. At Grosseibstadt, Ldkr. Königshofen, Franconia, burial 1, a rich wagon-burial of Ha C1 contained five hollow, two-piece heads of iron on iron shafts (Kossack 1970, 55, 117, 121, Taf. 32, 3a-e). Barrow 10 at Wilstedt, Kr. Stormarn, Holstein, contained a similar object (Hingst 1959, 48, 496, Taf. 91, 11), dated to the transition between MV and the ältere vorrömischen Eisenzeit (*ibid.*, Abb. 17a). These two finds compare with the early Ha C date for Saint-Vincent pins provided by the Oss burial. Iron pins with swan's-neck shafts and hollow, two-piece heads occur in phase Ia of Harck's pre-Roman Iron Age (1972, 25, Tabelle 1) but this is equivalent to Ha D (*ibid.*, 28).

Swan's-neck pins. LIST 250

In Britain only the pins from Islip, Brighton and All Cannings Cross (List 250, 1-3) have the double curve of a true swan's-neck pin; Hodson (1964, 105) has pointed out how rare this form is. Bronze swan's-neck pins occur in central Europe during Ha C and Ha D (Kossack 1959, 32, 288-289, Taf. 153A, 2) and at the same time in Lower Saxony (Laux 1976, 128-132) where iron examples appeared during Ha D in Harck's phase Ia of the pre-Roman Iron Age (1972, 24-25, 28). During subsequent phases of the north German Iron Age the swan's-neck form was replaced by the simple bent form (*ibid.*, 31-32, Taf. A-B). The bronze pin from barrow 9, Dehnsen, Kr. Lüneburg, placed in Jastorfa by Krüger (1961, 44, Taf. 23, 15b), is given a Wessenstedt, i.e., Hallstatt, date by Laux (1976, 132 no. 809). In Holstein the latest swan's-neck pins occur in Hingst's phase Ia of the pre-Roman Iron Age, i.e. MVI (1959, 113, Abb. 17a, 1). Swan's-neck pins occur only during the first half of MVI in Mecklenburg (Keiling 1969, 46).

None of the British examples appears to belong to a diagnostic continental type; the bronze pins from Islip and Brighton could be of LBA4 or EIA1 date while the iron pin from All Cannings Cross should be EIA1.

Ring-headed pins

Pins with a ring-head and curved shaft are common during the British Iron Age (Dunning 1934, 272-287; Kirk 1949, 15; Harding 1972, pl. 73) but only their origin is relevant here. Ring-headed pins occur in both bronze and iron. Elaborate bronze examples come from the early La Tène burials in east Yorkshire (Stead 1965, fig. 32, 3-4) and Stead suggests that these stand at the head of the British sequence, being derived from French forms and possibly influenced by swan's-neck and related pins (*ibid.*, 58 n. 7).

The British form of ring-headed pin appears to be distinct from any continental form. The numerous examples of the early pre-Roman Iron Age in northern Germany and Jutland are distinguished by a semi-circular curve low down the shaft (Krüger 1961, 45-46; Becker 1961, 252, pl. 93, 52; Keiling 1969, 48; Harck 1972, 31, Taf. A, 15; Hingst 1959, 113, Abb. 17a, 34-35). True ring-headed pins appear to be unknown in Early Iron Age contexts in northern France. The insular ring-headed pin could be a typological development from the swan's-neck pin, cf. the presence of both forms in bronze at Islip; (Harding 1974, fig. 34, C, E) and in iron at All Cannings Cross (Cunnington 1923, pl. 21, 1-4), but the swan's-neck form is much rarer and a thorough study of the associations of ring-headed pins would be necessary to establish their chronology.

At Goirle, N. Brabant, there is an iron pin with a twisted shaft and a separate ring-head in an urn of late Ha C or Ha D S-shaped profile (Verwers 1966a, 42, 47, fig. 6, 36 a-b; Desittere 1968, 122, fig. 48, 7-8) but this does not appear to be relevant to the British pin.

Miscellaneous Early Iron Age pins. LIST 251

The Islip pin (List 251, 5) resembles a north German form, the Spaten-kopfnadel, which appeared during Jastorf a in the west but is dated mainly to

Jastorf b and c, middle and late La Tène (Krüger 1961, 43). This late date also applies to examples from Mecklenburg (Keiling 1969, 48, Taf. 16, w-x). These northern pins are usually of iron like the Spatenkopfnadeln of the Hunsrück-Eifel culture (Haffner 1976, 17, Beilage 1) where a HEK IA2 date represents later Ha D (*ibid.*, 89, 99, Abb. 16). South-west German examples are also Ha D (Kossack 1959, Abb. 12B, 13; Mansfeld 1971, 109, 116, Liste 10-11, Abb. 5) and bronze appears to be characteristic of female rather than male burials. The Islip pin could be of EIA1 date and central European origin.

Iron pins with curved necks and plain upright heads are common during the Jastorf phase in northern Germany (Krüger 1961, 45; Hingst 1959, 113, Abb. 17a, 52, Keiling 1969, 49; Harck 1972, 32, Taf. B, 51). The plain head appears to be rare in HEK I contexts (Haffner 1976, 17) and during Ha D in central Europe (Mansfeld 1971, 105), though the Haps pin (List 251, 10) should be of this date. The bronze pin from Ham Hill (List 251, 7) does not appear to have secure continental relations.

The roll-headed pin from Hammersmith (List 251, 3) may be compared with examples from northern Germany which are dated as early as Ha C by Harck (1972, 24) but from Ha D to middle La Tène by Krüger (1961, 45, Taf. 14, 17); this later date is also allowed by Harck and Hingst (1972, 33, Taf. B, 83; 1959, 113, Abb. 17a, 19). Roll-headed pins are also known during period I of the Iron Age in central and southern Jutland (Becker 1961, 252-253, e.g. pl. 94, 65 c-d). Many of these continental pins have a broad head, apparently unlike the Hammersmith pin.

The pins with simple curved shafts from Kent's Cavern, Jordan Hill, Sudbrook, South Cadbury and Portslade (List 251, 1-2, 6, 8-9) may be related to disc-headed pins with curved shafts (see p. 203-5) but do not appear to be of much chronological value. Considerable chronological significance has been placed on the Fengate pin (List 251, 4) since Hawkes judged it to be of east German/Polish origin and late Hallstatt or early La Tène date (1943, 199) and only recently has Spratling (1974) pointed out that a later date is possible. Disc-headed pins occur in northern Germany (Krüger 1961, 50; Keiling 1969, 48; Harck 1972, 32) but I can find no example with the same curved iron shaft and flat bronze disc-head as the Fengate pin; Hawkes ventured further east (cf. Dunning 1934, fig. 1, 6; Petersen 1929, Taf. XXX, 6) but these pins have concave heads. The earlier origin of disc-headed pins in Britain and Ireland (see p. 204-5) and the presence at Oss of pins with bent iron shafts and hollow bronze heads (List 249, 2) seems to militate against an eastern origin and the lack of precise parallels renders the date of the Fengate pin uncertain.

Hallstatt bracelets and collars. LIST 252

Various Hallstatt bracelets and a collar have been identified in Britain and Ireland; no discussion has been more than summary (Cunliffe 1974, 143, fig. 10:12; Harbison and Laing 1974, 23; Jope 1958) and Jope has provided the most complete list (*ibid.*, 13 n. 10-11).

The bracelets from Scarborough, found near the occupation site on Castle Hill (Smith 1927), the Thames and Antrim (List 252, 3-5) belong to the same general form. The bossed ornament is probably derived from late Urnfield

bracelets. These bracelets are known during Ha C in Bavaria (Kossack 1959, 32, Taf. 13, 14-15), during Ha D in Switzerland (Drack 1970, 44-45, Abb. 55) and during Ha D in the Hunsrück-Eifel culture (Haffner 1976, 13, Taf. 20, 10; 114, 16; Dehn 1941, I, 102, Abb. 62; II, 149, Liste 8). The British examples should be of central European origin.

The best comparisons for the Cold Kitchen Hill bracelet (List 252, 2) appear to be the examples from the late Hallstatt barrow cemetery at Le Rocher, Le Bono, Morbihan (Marsille 1921, 96 no. 1575; Giot 1976, 782, fig. 1, 2), cf. the bracelets from the Hallstatt cemetery at La Cambe, Calvados (Verron 1976b, 805, fig. 1, 22). This bracelet should be of north-western French origin, probably associated with the import of Armorican socketed axes.

Savory (1976a, 26) has dated the Clynnog collar (List 252, 1) to the early La Tène period; its link method of attachment was confined mainly to the late Hallstatt period in the Marne (Bretz-Mahler 1971, 58) but is otherwise present in Britain only on bracelets from early La Tène contexts in east Yorkshire (Stead 1965, 49-50). The collection of ribbed and bossed bracelets from Mount Batten, Plymouth, Devon (Clarke 1971, 147, fig. 3, 5-7, pl. I, 21-23), has not been studied in detail but is probably contemporary with this east Yorkshire group.

Bracelets with large globular terminals occur during Ha D in eastern France, especially the Hagenau Forest (Schaeffer 1930, 239, fig. 175, 15-24; Degen 1968), also in Languedoc (Guilaine 1972, 357, fig. 132, 4) and in south-western France during Ha C (Ward-Perkins 1940, 42, 83, fig. 4; Mohen and Coffyn 1970, 111, pl. XX, 6). In bronze this form appears to be absent from Britain, though there is a pair of gold bracelets with small globular terminals from Nowton, Bury St. Edmunds, Suffolk (Longworth 1970-72). If the Kilmurry bracelet, from south-western Ireland, were related to the French bracelets it would provide a rare association of a continental Hallstatt object with native Irish types of Dowris tradition (Eogan 1964, 320). The Derry bracelet (List 252, 7) is more exotic, of Italian origin and sixth- or seventh-century date, and is so isolated that its provenance as an ancient import must be dubious; the closest examples appear to be from south-eastern France (Bocquet 1969, 280, fig. 73, 8).

The chronology of the Erondelle bracelets (List 252, 14) should be indicated by the associated Ha C sword. Massive penannular bracelets with oblique and herring-bone ornament like the decorated example are known at Hallstatt (Peroni 1973, 22, fig. 13, 3-4, 6).

Hollow bronze ornaments are common in Switzerland during late Ha D (Drack 1970, 46-48, Abb. 61-69) and also in the Hagenau Forest (Schaeffer 1930, 242, fig. 175, 35-38). Hollow bracelets occur in Ha D burials at Les Jogasses, Chouilly, Marne (Babes 1974, 15, Taf. 3, 1; Hatt and Roualet 1976, 441, pls. 44, 1114-1115; 45, 1119-1120); in north-western Germany they are common MVI types (Sprockhoff 1959, 152-153, Taf. 30, 23; 32-33; Jacob-Friesen 1974, 448-450) and decorated examples are numerous in Pomerania during Ha C (Kleemann 1976, 116-119). The hollow bracelets from Huest and Jouy-sur-Eure (List 252, 9-10) resemble Ha D types.

The Longeuil-Sainte-Marie bracelet (List 252, 12) comes from a Ha D site (Blanchet and Samadet 1975, 19) and similar Swiss Ha D1 bracelets are known (Drack 1970, 39, Abb. 35, 1). Bracelets like the Marcilly-sur-Eure example (List 252, 11) with round section and overlapping terminals occur in Swiss Hallstatt contexts but are not closely datable (*ibid.*, 40, Abb. 39). Simple bracelets like the first two from Villeneuve-Saint-George (List 252, 15) are found at Les Jogasses (Babes 1974, 15, Taf. 3, 2, 6) but are of uncertain date like the third Villeneuve-Saint-Georges bracelet which Eluère (1972, 105) compares with more elaborate bracelets with globular terminals.

The Villers-sur-Coudun and Breuvanne bracelets (List 252, 13, 18) are probably related to forms present at Les Jogasses (Babes 1974, 16, Taf. 4, 1-6) and in Switzerland during Ha D1 (Drack 1970, 39, Abb. 35). The Breuvanne pottery is contemporary with the later pottery from Saint-Vincent, Luxembourg, Ha D and early La Tène (Mariën 1964, 165). The number of finds of fragmentary bracelets from Belgian Urnfields suggests that they were more popular during the Early Iron Age than complete finds might imply (de Laet and Mariën 1950, 327, fig. 10; Mariën 1964, 152; van Impe, Beex and Roosens 1973, 19-20).

The Belgian neck-rings (List 252, 16-17) are probably of Ha D date (de Laet and Mariën 1950, 325). The Haps Wendelring (List 252, 19) is probably of middle Rhine rather than Nordic origin and of Ha D date (Verwers 1972, 54-55; Haffner 1976, 10).

Bracelets with everted terminals. LIST 253

Bracelets with everted terminals were common during LBA3 but some examples from cemeteries on the lower Rhine may be later. Most of the burials at Lommel-Kattenbosch (List 253, 1) are of Hallstatt or La Tène date (Desittere 1968, 136) and the urn associated with the De Hamert bracelet (List 253, 2) is a Ha C/D form (Verwers 1972, 130). Weert (List 253, 3) has produced material of Ha B and Ha C (Desittere 1968, 132) and these bracelets do not appear to be characteristic LBA3 forms. Bracelets with everted terminals occur at Rheinberg, Kr. Moers, Rhineland (Stampfuss 1939, 42, Abb. 33, 3-8), mostly in burial 94 (*ibid.*, Taf. 11, 1-7) with a Ha C/D Schrägrandurn (*ibid.*, 41-42; Verwers 1972, 125-127).

Conical pendants. LIST 254

Conical bronze pendants occur in several Early Iron Age burials from northern Belgium and the southern Netherlands; the better-preserved finds indicate that sets of such pendants constituted necklaces for young women. Two of the burials at De Roosen (List 254, 2-3) also contained urns with roughened surfaces of Ha C/D date (van Impe, Beex and Roosens 1973, 13-17, 18-19; Verwers 1972, 141) and the pendant from Best (List 254, 6) was with a contemporary urn (*ibid.*, 140-141). The pendants from Achel (List 254, 1) are dated to Ha D by the associated egg-beaker (*ibid.*, 128-129, 141). Finds of conical pendants from the German Rhineland confirm this Ha C/D chronology (*ibid.*, 141).

Curved-bow brooches, bow slightly swollen. LIST 255

Brooches of this form were current in Italy during the ninth to seventh centuries (Duval, Eluère and Mohen 1974, 13). A hoard from Mulhouse, Haut-Rhin, contains two examples (*ibid.*, fig. 5, 2, 4) with eight other Italian brooches, a globular-headed pin, a spearhead socket and a small bronze ring (*ibid.*, 56; Millotte 1963, 137-138, 321, pl. LI, 19-32). The local bronzes are undiagnostic but this find suggests that these Italian brooches reached eastern France before the end of the Late Bronze Age. Further west, a hoard from Argenton-le-Creuse, Indre, contained a brooch of this type (Duval, Eluère and Mohen 1974, 52-53, fig. 5, 6) with four other Italian brooches. Both these hoards are dated to the eighth century (*ibid.*, 13) but there are suspicions about the authenticity of the Argenton hoard (N. Freidin).

The Amiens brooch (List 255, 7) is a pre-Certosa type of Adriatic origin and sixth- or fifth-century date (Peroni 1973, 68, fig. 21, 5).

Curved-bow brooches, bow slightly swollen, long catch-plate. LIST 256

This is a rare form, the long catch-plate is only common on brooches with a more swollen bow. Comparative examples are rare (Sundwall 1943, Abb. 330), but the long catch-plate of the Forest of Compiègne brooch (List 256, 1) probably indicates a seventh-century date (*ibid.*, 56).

Curved-bow brooches, bow swollen, short catch-plate. LIST 257

Small examples of this form are dated to the ninth and eighth centuries (Duval, Eluère and Mohen 1974, 15-17); there are two examples in the Mulhouse hoard. Large examples are of eighth- and seventh-century date (*ibid.*, 17-21); there is one example, found with another brooch now lost, in a barrow at Flagey, Doubs (*ibid.*, 51; Millotte 1963, 294-295), which is probably of Ha C date. There are examples in French hoards from Mulhouse, Carcassonne, Aude (Duval, Eluère and Mohen 1974, 49; Guilaine 1972, 347-350), a 'Launacian' hoard containing Bronze Final III and Ha C material, and Notre-Dame-de-Livoye, Manche (Duval, Eluère and Mohen 1974, 54; Verron 1976b, 805; Briard 1965, 228-229), perhaps contemporary.

The Kingham brooch (List 257, 2) belongs to a small group of Italian brooches (Sundwall 1943, 258-259, Abb. 440) and its short catch-plate probably indicates a late eighth- or early seventh-century date (*ibid.*, 63).

The nature of the Iwuy find (List 257, 6) is not certain; it appears to be a burial with a bracelet and some form of Hallstatt brooch with a swollen bow.

Curved-bow brooches, bow swollen, long catch-plate. LIST 258

These brooches are of eighth- and seventh-century date in Italy (Duval, Eluère and Mohen 1974, 24, 26) and French finds confirm this chronology. There is an example in the Mulhouse hoard (*ibid.*, fig. 12, 11) and a small example in the Bronze Final III hoard from Ray-sur-Saône, Saône (*ibid.*, 56, fig. 12, 6; Millotte 1963, 137, 332 pl. XLII). The finds from the Hagenau Forest are probably Ha C (Duval, Eluère and Mohen 1974, 56, fig. 12, 1-2; Schaeffer 1930, 58-59, 68, 205, figs. 53-54, 179).

Curved-bow brooches, swollen bow formed of discs, disc-shaped catch-plate.
LIST 259

This form is of Italian origin and late eighth- to early sixth-century date (Sundwall 1943, 38-39, 118-119, Abb. 152; Harbison and Laing 1974, 23 n. 108). None of the French brooches with disc-shaped catch-plate (Duval, Eluère and Mohen 1974, 13) has the same form of bow as the Alton brooch (List 259, 1).

Curved-bow brooches, swollen lozenge-shaped bow, long catch-plate. LIST 260

These brooches are dated to the seventh and early sixth centuries in Italy (Duval, Eluère and Mohen 1974, 28-30). There is an example in the Notre-Dame-de-Livoye hoard, Manche (*ibid.*, 54, fig. 15, 4), possibly of Bronze Final III/Ha C date (see

Serpentiform brooches. LIST 261

Brooches of this form appeared at the end of the eighth century and lasted into the sixth (Duval, Eluère and Mohen 1974, 37-38) and two French examples have been found in Ha C barrows (*ibid.*, fig. 22, 9-10). Serpentiform brooches like the Ciry-Salsogne example (List 261, 8) usually have ornament on the terminal of the catch-plate (Mansfeld 1973, 6-7, Abb. 2-3, S4d). In iron this form is found in the Ticino valley and in northern Italy (*ibid.*, 12, Fundliste 36, 39) and similar bronze brooches are dated to the Ha C/D transition (*ibid.*, 86). The occurrence of an iron example in the second warrior-burial at Sesto Calende, Como, indicates a similar date (Frey 1969, 50). Another iron brooch from Ciry-Salsogne may be of Hallstatt date (Moreau 1891, pl. 127, 8).

The Berkhamstead brooch (List 261, 2) could be as early as the tenth century (Müller-Karpe 1959, 44, 46, Abb. 33, 5).

Spiral brooches. LIST 262

Brooches with spiral bows fall into two groups: first, double-spiral, so-called 'spectacle' brooches; second, quadruple-spiral brooches. Double-spiral brooches are more common; the distribution of spiral brooches is widespread in central and Mediterranean Europe.

Double-spiral brooches are common at Hallstatt and, while other variants occur in central Europe (Betzler 1974, 134-143), the examples from Colchester and Nijmegen (List 262, 1, 5) appear to belong to the Haslau-Regelsbrunn type of which most examples come from Hallstatt (*ibid.*, 91-133), though some late Urnfield finds are known (*ibid.*, 128-130). In central Europe quadruple-spiral brooches are of Ha D date (*ibid.*, 143-150).

The letter from Prince Leopold of Bavaria to Ramsauer (Pauli 1975, 7) gives a genuine instance of the dispersal of a pair of double-spiral brooches which were subsequently lost and could have reappeared with another provenance. Unlike most of the brooches discussed above these spiral brooches are of north-Alpine origin and any of the finds listed here may be among the rare central European Hallstatt exports to western Europe.

Brooches: discussion

Since the paper by Ridgeway and Smith (1905-07) so-called 'Italian' or 'Italic' brooches have been noted from the British Isles on numerous occasions and a summary list with a distribution map was published by Harden (1952). No such brooch has been excavated under modern conditions and many examples with vague provenances are not listed here. A serpentiform brooch (List 261, 3) was recorded as having been found in a barrow near Water Newton with three other exotic objects. At Alton two brooches (Lists 259, 1; 261, 1) are said to have been found with an Egyptian scarab and some pottery (Harbison and Laing 1974, 23); the brooches may be of seventh-century date, the scarab a little later, though the date of its import is uncertain and could be Roman or post-Roman (Harris and Harris 1965, 90-92). Ixworth is the find-spot of several brooches of Early Iron Age type (Lists 255, 3; 258, 4-5), an earlier brooch of German origin (see p. 127) and a fragment of a Hallstatt vessel (see p. 252) and this concentration of such objects in north-west Suffolk has been regarded with suspicion (Fox 1923, 74; Clarke 1939, 30-31). Branigan (1974-76, 175) has suggested that many brooches may have been imported into Britain during the Roman period.

About eighty exotic brooches are known from Britain; most have a curved bow and are of Italian origin and eighth- or seventh-century date. Earlier Italian brooches are rare, as are examples of the later Certosa type (Harbison and Laing 1974, 23). The publication of a corpus of exotic brooches from France (Duval, Eluère and Mohen 1974) shows that many of the Italian types known in Britain occur in France in hoards and local production-centres north of the Alps may have existed (*ibid.*, 43). The types common in Britain are also common north-eastern France, though hoard finds are absent from this area. Due consideration should be given to the finds from the Forest of Compiègne (Lambot 1975) during the excavations of Napoleon III alongside many Gallo-Roman brooches whose authenticity is not in doubt, though the possibility that the earlier brooches were Roman exports remains open. Apart from the spiral brooches (List 262) no central European Ha D type of brooch reached beyond the Marne or the Meuse in the area considered here (Bergmann 1958, Karte 1); there is a single example on the north side of the Marne from Caranda, Château-Thierry, Aisne (Mansfeld 1973, 241, List 243, III 17). Hodson (1971) has emphasised this and demonstrated that brooches of early La Tène date with Ha D features were produced in the lower Thames valley.

The French evidence suggests that some of the brooches with swollen and lozenge-shaped bows (Lists 257-258, 260) may be ancient imports into Britain and this is also possible for the spiral brooches (List 262).

Wiesloch razors. LIST 263. MAP 81

Wiesloch razors have an oval blade with a V-shaped notch at its apex and circular and triangular perforations; the handle has a small ring terminal. Though named after a site in Baden (Jockenhövel 1971, 180), the most characteristic examples of this type come from the Belgian province of Namur (List 263, 2-4). There are related examples from Quemigny-sur-Seine, Côte-d'Or (de Mortillet 1903, pl. C, 1344), and Garlstedt, Kr. Osterholz-Scharmbeck, Lower Saxony (Tackenberg 1971, 132, Taf. 33, 5).

While there are no securely-associated finds, a Ha C date is likely (Jockenhövel 1971, 181; Tackenberg 1971, 132-133) and the pottery from the Fosse-aux-Morts (Louette-Saint-Pierre) cemetery allows such a date for the Belgian finds (Desittere 1968, 31).

Endingen razors. LIST 264. MAP 81

Endingen razors have a single-edged trapezoidal blade with a concave back, a ring at either end; openwork ornament is common. This type is widespread, occurring in western Germany (Jockenhövel 1971, 238, Taf. 51C), southern France (Louis, Taffanel and Taffanel 1960, figs. 33; 73, 6), Belgium (List 264, 8-9), southern England (List 269, 1-6) and probably in Scotland (List 269, 7). A Ha C date is indicated by the south German finds (Jockenhövel 1971, 238-239), the finds from Elmenhorst, Kr. Recklinghausen, Westphalia (Tackenberg 1971, 141), Bruyère-Saint-Job (List 264, 8) and Danebury (List 264, 2). The Traprain Law fragment (List 264, 7) may be compared to the example in barrow D/1 at Créancy, Côte-d'Or (Henry 1933, 130, fig. 16, 3) of Ha C date (Wamser 1975, 69, Taf. 19, 10).

The Endingen type includes most of the Trapezoidal-bladed razors from Britain and appears to be more common here than in any other region; it may be a British LBA4 type.

Flörsheim razors. LIST 265. MAP 81

Flörsheim razors have a single-edged trapezoidal blade with a concave back which has a ring at either end and a vertical shaft in the centre, curved bars link the rings and the shaft which may be surmounted by another ring (Jockenhövel 1971, 239). This type occurs in France, in northern and western Germany and in Denmark (*ibid.*, 239-240; Tackenberg 1971, 141-142, Liste 66, Karte 26; Broholm 1949, pl. 25, 2) and is dated to Ha C/MVI.

Bernissart razors. LIST 266. MAP 81

This type is related to the preceding type; it has the Flörsheim form without the vertical shaft. It is a northerly variant with two Belgian, one English (List 266, 1-3) and one north-west German find from Drangstedt, Kr. Wesermünde, Lower Saxony (Tackenberg 1971, 142, Taf. 34, 10; Jacob-Friesen 1974, Abb. 481). Typological relationship with the Flörsheim and Endingen types suggests a Ha C date and this is supported by the form of the Fosse-aux-Morts urn (Desittere 1968, 31).

Triangular-bladed razors. LIST 267. MAP 82

Both the Cardiff and Llyn Fawr hoards (List 267, 1-2) contain triangular-bladed razors with triangular perforations. Savory (1976a, 47) derives this form from eastern French razors found in the Jura and, more commonly, in Burgundy in Ha C burials (Henry 1933, fig. 16; Wamser 1975, 31, 69, Taf. 3, 6-7; 18, 5; 19, 7-9). These razors have broad, semi-circular blades with multiple triangular perforations and single rings; this form occurs at Haulzy, Marne (Mariën 1964, 165, fig. 111), but otherwise appears to be absent from northern France. Triangular-bladed razors could be an insular variant of LBA4 single-edged razors with trapezoidal blades; cf. the small

Endingen razor from Ham Hill (List 264, 4) as a transitional example.

Circular-bladed razors. LIST 268. MAP 82

The circular-bladed razors from the Cardiff hoard and Putney (List 268, 2-3) both have triangular perforations which should relate them to triangular-bladed razors; they are probably insular LBA4 products. The Belgian razors (List 268, 4-8) may be related to the Wiesloch type and should be of Ha C date. The fine razor from the Danebury hoard (List 268, 1) is from a LBA4 hoard; its annular form, openwork ornament and ring-handle suggest an eastern French Ha C origin (Jockenhövel 1971, 181-182). All these traits occur on razors from Burgundy (Wamser 1975, 69, Taf. 18, 7; 19, 1-4) usually associated with long iron swords and dated to late Ha C (*ibid.*, 88-89, Tabelle 12), though the razors are derived from late Urnfield forms.

Iron razors. LIST 269. MAP 82

Three Belgian cemeteries of Early Iron Age date have produced iron razors. The associated urn at Lommel-Kattenbosch (List 269, 3) is a characteristic Ha C form (Desittere 1968, 41-42, fig. VI, a5); the Saint-Vincent urn (List 269, 4) belongs to group III of late Ha C date (Mariën 1964, 159-162). The crescentic iron razor from barrow 2 at Morimoine is less easy to date. Crescentic iron razors were current in central Europe during Ha C (Rieth 1942, 33) and Ha D (Kossack 1959, Abb. 12B, 14; Drack 1972-73, 127) and appeared in Burgundy during late Ha C (Wamser 1975, 72, Taf. 20, 7); they were common during the Early Iron Age in northern Europe (Harck 1972, 24-25, Tabelle 1; Krüger 1961, 20-21). The iron belt-hook (Mariën 1958, 225 no. 4, fig. 43) may suggest a Ha D date (Wamser 1975, 51, 78, Taf. 14, 4; 25, 2).

Savory has suggested that the iron razor from Dinorben (List 269, 1) is a copy of a Nordic bronze form (Gardner and Savory 1964, 154) but the lack of such razors in Britain militates against this interpretation.

Miscellaneous razors. LIST 270

The Kinleith razor (List 270, 1) is an unusual form, presumably insular; the openwork blade suggests a LBA4 date but this could be derived from the key-hole notches on LBA3 razors with multiple-ring handles (see p. 219). The Staple Howe fragment (List 270, 2) is probably from a similar razor but the published reconstruction (Brewster 1963, fig. 61, 3) is speculative and the original form is uncertain; this fragment is from the filling of the first palisade trench (*ibid.*, 113) so should be associated with the early occupation of the site (Ritchie 1970, 53).

LBA4/EIA1: SUMMARY

Insular production of bronze axes continued during LBA4 with linear-faceted and Sompting axes apparently superseding earlier forms in southern Britain; both these types are widespread with local centres of production. A group of linear-faceted axes found in the eastern Netherlands was probably derived from earlier Dutch faceted axes, though a British linear-faceted axe was exported to Holland; linear-faceted axes, apparently not British, are known from Belgium and north-eastern France. Large ribbed axes in the lower Scheldt area and Geistingen axes in the lower Meuse area may have been current during LBA4. Armorican socketed axes reached Britain during LBA4, most hoards are from Wessex, and they influenced Sompting and some linear-faceted axes, in north-eastern France there are concentrations in the lower Seine and Somme valleys and hoards occur to the Belgian border, but finds are sparse in Belgium and the Netherlands. Iron socketed axes appeared on the continent during Ha C/MVI and a few British examples resemble these early forms but are of uncertain date. Stone shaft-hole axes were used during the late Bronze Age and Early Iron Age in northern Europe and the eastern Netherlands shared particular forms with adjacent parts of north-western Germany.

Specialised bronze tools continued in use during LBA4 in southern Britain; socketed gouges retained their earlier form while socketed leather-working knives and heeled socketed sickles appear to have been new forms, the last being imitated in iron at Llyn Fawr (218). There is one find of a bronze heeled sickle from north-eastern France, otherwise these LBA4 tools appear to be unknown on the continent where the Oss burial (231) shows that iron socketed axes and knives were current at this time.

Bronze spearheads are not certainly known from LBA4 contexts in southern Britain though the Melksham hoard (224) contained bronze and iron spearheads; iron spearheads were known in Britain and in Belgium at this time. After several centuries of popularity the leaf-shaped sword ceased to be the dominant weapon in central and western Europe after Ha C; in central Europe it was succeeded by the iron spearhead which may have been predominant during EIA1 in Britain, but confirmation of this is lacking.

Before its decline the leaf-shaped sword was represented by fine bronze and iron types characteristic of Ha C through most of Europe though there were distinct regional preferences for one metal or the other. Bronze was preferred in Britain and north-eastern France where the long Mindelheim type was absent, with one exception, in bronze or iron. Bronze and iron were approximately equal in popularity in Belgium and the southern Netherlands but most iron swords were the long type and all bronze swords the short Gündlingen type. It is possible that the Gündlingen type was derived from the insular Ewart Park type as a replacement in central Europe for

the late Urnfield solid-hilted sword, while the Mindelheim type replaced the late Urnfield long flange-hilted sword. The warriors interred in the rich burials of the lower Rhine area were able to command long swords of the new material, iron.

The distribution of Hallstatt chapes reflects that of Hallstatt bronze swords, some types may have been influenced by LBA3 bag-shaped chapes.

Short iron swords with antennae-pommels appeared in central Europe during Ha C2 and single examples reached Britain and Belgium but do not appear to have been influential. Iron daggers, characteristic of Ha D in central Europe, were also produced in Britain where a small group is known from the lower Thames valley in EIA1 and a single example exported to Belgium. This lower Thames workshop continued to produce daggers of early La Tène form, but the initial inspiration must have come from south-western Germany; the most northerly export from this region is at Haps (230).

Finds of so-called "Scythian" arrowheads in western Europe probably originated in Greek colonies not in Scythian raids. These arrowheads are bronze; iron arrowheads of Ha D date occur in the Netherlands.

Ha C Kurd buckets of central European origin reached the Netherlands where they were used in burials, probably continuing an earlier tradition of metal vessels as cremation urns; this practice persisted in the early La Tène period. Insular cauldrons, perhaps also buckets, were current during LBA4 but were not used for burials. Single examples of ribbed pails are known from the Netherlands, in a burial, and Britain, perhaps a river find; also a river find is the Ha D cauldron from the Thames. Other exotic bronze vessels may have been EIA1 imports into Britain. Flesh-hooks may have accompanied insular cauldrons during LBA4 and there is an iron trident, probably a flesh-hook, in barrow 3 at Court-Saint-Etienne (228).

Characteristic items of Hallstatt horse-gear occur in the rich burials of the lower Rhine area and in Britain. Ha C phalerae of Bavarian form reached Court-Saint-Etienne, London and Llyn Fawr, while there is an east-Hallstatt phalera in the LBA4 Sompting hoard. Conical cheek-piece ornaments may be contemporary. Iron cheek-pieces of central European origin are confined to the lower Rhine area while bronze cheek-pieces which show at least a little insular influence occur at Court-Saint-Etienne and Llyn Fawr. Yoke-mounts also occur in Britain and the Low Countries. Concave oval attachments and miscellaneous items of Hallstatt horse-gear occur principally at Court-Saint-Etienne.

Saint-Vincent pins may be of central European Ha C origin but the Hallstatt swan's-neck form is very rare in western Europe and few British pins show continental Early Iron Age influence.

A few Hallstatt bracelets and collars reached Britain and Ireland with one Breton bracelet of late Hallstatt date. An Irish bracelet with globular terminals may be of continental Hallstatt origin. There are Hallstatt bracelets from north-eastern France and Belgium; everted-terminal bracelets were still current during Ha C/D in the lower Rhine area. The Ha D Wendelring from Haps is probably of middle Rhine origin. Conical pendants are a characteristic ornament of the Early Iron Age on the lower Rhine.

Many exotic brooches, mainly of Italian origin, are known from Britain and north-eastern France, with a few from Belgium and the southern Netherlands. Some of the forms with swollen or lozenge-shaped bows occur in Late Bronze Age hoards in France where there may have been local production centres, so some British examples may have been ancient imports.

Bronze razors were current in Britain during LBA4 and some 'Hallstatt' types may have been insular products. Similar bronze razors occur in Ha C Belgian burials, where iron razors are also found.

Hoard continued to be deposited in southern Britain during LBA4 but they were not numerous; only hoards with many Armorican socketed axes appear to represent this period on the continent. There are numerous rich Ha C burials in Belgium and the southern Netherlands. While most LBA3 type are absent from LBA4 hoards in southern Britain the LBA3 tradition probably continued in northern Britain and Ireland (Eogan 1964, 320; Mackie 1971; Raftery 1976a), but LBA4 types are rarely found in hoards in these areas and, as at Adabrock (222), LBA4 date may be uncertain. Iron had presumably superseded bronze in southern Britain during EIA1 but insular products certainly of this phase are rare, Thames daggers being the most characteristic. Armorican socketed axes may still have been current at this time in Britain and on the continent. Rich burials in the lower Rhine area characteristic of Ha D are rare; burial 190 at Haps (230) is poor by Ha C standards.

CHAPTER 8

DISCUSSION

CHRONOLOGY

Correlation

The occurrence of MBA1 Acton Park palstaves in Tréboul hoards in Brittany and the consistent appearance of early continental shield-pattern palstaves in contemporary Lochham, Sögel and Valsømagle contexts suggest that the Acton Park phase may be correlated with late MI and Reinecke B. Acton Park material was not current in southern Britain and there is extensive evidence to indicate that the late Early Bronze Age tradition, Camerton-Snowhill and Aldbourne burials and Arreton bronzes, was still current at this time. Arreton axes were probably associated with early shield-pattern palstaves in northern France and with Sögel axes in Britain. The latest daggers in the British series are related to Tréboul swords which were certainly current during the Lochham/Sögel phase. Some pins from Camerton-Snowhill dagger graves were probably contemporary with the Lochham phase though not, perhaps, so many as Gerloff has suggested (1975, 118-123). The same graves also contained whetstone pendants which can be matched in Sögel and early Tumulus contexts (*ibid.*, 123-125) and at Fort-Harrouard (Philippe 1936, fig. 33, 6). Female burials of the Aldbourne series probably lasted to the time of the early Tumulus period (Gerloff 1975, 232-234); an amber spacer-bead from a burial at Andrup, Ribe Amt, Jutland, may be of British, not Tumulus, origin (*ibid.*, 218; Lomborg 1967; 1973, 75); the associated flint dagger is a form known from late MI Fardrup and Sögel contexts and early MII (*ibid.*, 69-76). Arreton socketed spearheads may be related to Reinecke B solid-hilted swords by decoration and hollow-cast manufacture (Gerloff 1975, 152-154), though the spearhead in the late MII Spøruplund hoard (87), Arreton or derivative, may be residual. There appears to have been a chronological overlap at the time of the well-defined Tréboul/Lochham/Sögel horizon between the geographically separate Middle Bronze Age Acton Park industry and the Early Bronze Age Arreton industry with contemporary burials.

Palstaves characteristic of MBA2 in southern Britain and northern France occur in MII and Reinecke C contexts and the flourishing later Middle Bronze Age industry in these areas must have been contemporary with the later Tumulus period. For Nordic correlations, only Taunton-Hademarschen axes seem to compel any overlap between MBA2 and MIII.

LBA1 may be correlated with Reinecke D and Ha A; some finds should be as early as Reinecke D while others must be as late as Ha A2. The transition from MBA2, related to the later Tumulus period, and LBA1,

related to the early Urnfield period, appears to be well-defined in southern Britain and in northern France. While LBA2 is a substantial and independent phase in these areas there is little material to provide evidence for correlation with other parts of Europe. This phase must have been current during Ha B1 and, though its swords may have appeared a little earlier, the characteristic hoards were probably not deposited until this time. Correlation of the transition from LBA2 to LBA3 is more difficult; Burgess (in litt.) now confines the Wilburton phase to Ha B1 and includes Ha B2 contemporary with the Ewart Park phase. The Isleham hoard (127) includes a bracelet possibly of MV date but this does not accord with the possible MIV date for the Løvskaal hoard with its LBA3 axes (see p. 172). The uncertain status of Ha B2 and the attendant difficulties in the correlation of the MIV/MV transition with the central European chronology render the correlation of the LBA2/LBA3 transition, exemplified in north-eastern France by the Combon (164) and Giraumont (170) hoards, obscure. This may be clarified by a more detailed exposition of a bipartite chronology of Ha B in the middle Rhine area.

LBA3 was undoubtedly current at the same time as Ha B3 and MV. It appears that the two continental phases ended at about the same time and LBA3 in southern Britain need be little prolonged if a British origin is accepted for Hallstatt bronze swords. Otherwise, LBA3 would have to be continued alongside Ha C in southern Britain as it probably was in northern Britain and Ireland, but only the Newark hoard suggests this if the problem of the swords is resolved (see p. 254).

LBA4 was probably contemporary with most of Ha C and there seems insufficient imported material to suggest internal sub-division or to retard the start of LBA4 to Ha C2. I am inclined to place the transition from LBA3 to LBA4 alongside the Ha B3/Ha C and MV/MVI transitions. There appears to be no cause to prolong LBA4 into Ha D so EIA1, in rather arbitrary fashion, may be correlated with this phase, separating the latest Bronze industry of southern Britain from the earliest La Tène metalwork.

The correlation of my phases in southern Britain with the continental sequence is outlined in Table 12.

Absolute chronology

The correlations established in the previous section enable a 'conventional' absolute chronology to be estimated for the metalwork of the British Bronze Age and Early Iron Age. Radiocarbon dates from samples directly associated with diagnostic items of British metalwork are still scarce and a coherent series of such dates does not appear to be an immediate prospect. The problems raised by the calibration of radiocarbon dates are too extensive for discussion here; such dates appear to provide a higher chronology than the conventional sequence, especially during the second millennium B. C., but to check the trans-European correlations of the conventional chronology against calibrated radiocarbon dates would be an enormous task.

The conventional absolute chronology of the earlier Bronze Age in Europe is derived from the Egyptian historical chronology (Hayes 1970) which is related to the Aegean chronology (Stubbings 1970) by finds of Egyptian material

Table 12

Southern Britain	Northern France	Central Europe	Northern Europe
Late EBA/MBA1	Tréboul	Reinecke B	Late MI
MBA2	<u>Bronze Moyen</u> III	Reinecke C	MII
LBA1	<u>Bronze Final</u> I	Reinecke D-Ha A2	
LBA2	<u>Bronze Final</u> II	Ha B1	
LBA3	<u>Bronze Final</u> III	Ha B3	MV
LBA4		Ha C	
EIA1		Ha D	

in Aegean contexts, Minoan and Mycenaean material in Egyptian contexts and mutual associations in other areas (Müller-Karpe 1959, 16-20, 23; Sandars 1971, 5-9). Finds of Aegean material in southern Italy establish the basis for a chronology to the north by correlation of the sequences in successive regions through Italy to the Alps (Müller-Karpe 1959, 226-227). Though relations between the east Mediterranean and east-central Europe existed at this time (Vladár 1973) the Hungarian absolute chronology is largely derived via Italy (Mozsolics 1967, 125-126; 1973, 112-115).

After the foundation of Greek colonies in Italy during the eighth century B. C. the European absolute chronology is derived from Greek history via pottery (Cook 1972, 259-269) using the same sequence as before over a shorter distance (Müller-Karpe 1959, 36-42, 227-228). For the Early Iron Age in central Europe datable Greek and Italian imports (Schaaf and Taylor 1975) allows material to be dated in its local context in addition to the chronology derived from the cemeteries of northern Italy and the Adriatic region.

The value of absolute dates derived from relative chronology will depend on the reliability of such links as can be established for given phases; thus, a date may be proposed more confidently for LBA3, with its widespread continental relations and well-defined lower boundary, than for LBA2, with its restricted continental relations and ill-defined boundaries. While dates derived from relative chronology might strictly be regarded as dates after which the relevant British phase was current, it is probably more realistic to attribute to the British phase, at some stage in its development, the date assigned to the continental phases with which it can be equated.

The end of the Early Bronze Age in southern Britain and the beginning of MBA1 can be equated with the Lochham, Sögel and Valsömagle phases which should be dated to the fifteenth century by reference to the Hajdúsámson horizon of the Hungarian chronology (Mozsolics 1967, 123; Bóna 1975, 276).

The end of the Middle Bronze Age in southern Britain and the beginning of LBA1 can be equated with Bronze Final I and Reinecke D, which was placed in the thirteenth century with Reinecke C, i. e. most of MBA2, in the fourteenth century (Müller-Karpe 1959, 150, 226-227, Abb. 64), but recent work suggests that this chronology should be lowered. Sandars places Reinecke C in the thirteenth century and Reinecke D in the twelfth (1971, 15, fig. 3) in accord with Mozsolics who places Reinecke D in the late twelfth and early eleventh

centuries (1971, 62, 71; 1973, 108-115). The duration of the Middle Bronze Age in southern Britain and northern France would thus be extended. Mozsolics has not yet published a detailed survey of Hungarian Late Bronze Age chronology. Sandars restricts most of Ha A to the twelfth century with Ha B beginning around 1000 B. C., in agreement with Müller-Karpe (Sandars 1971, 15, fig. 3); a shorter chronology for LBA1, which includes three central European phases, is not inappropriate.

There is little evidence for the correlation of LBA2 but this must occupy the beginning of the first millennium. The conventional date for Ha B3 (Müller-Karpe 1959, 132-133, 228, Abb. 64) and MV (Baudou 1960, 137) is the eighth century. Uncertainty about the status of Ha B2 renders uncertain the chronology of the middle of Ha B and thus the transition from LBA2 to LBA3. Sandars (1971, fig. 3) places Ha C in the eighth century without additional explanation, whereas Italian research still has Este II, equated with Ha B3 by Müller-Karpe, in the eighth century (Ridgway 1976, fig. 1).

More detailed work has been devoted to the chronology of the Hallstatt period in recent years. The beginning of Ha C is placed around 700 B. C. (Dehn and Frey 1962, Abb. 16; Peroni 1973, fig. 20) and its extent into the first quarter of the sixth century is represented by Ha C2 in Bavaria (*ibid.*) with Ha D beginning around 580 (*ibid.*, Ridgway 1976, fig. 1). LBA4 should have been current during the seventh century with slighter possibility of substantial time-lag (Cowen 1967, 384) if Hallstatt bronze swords appeared in Britain. The precise date of the end of LBA4 is uncertain but EIA1 should have begun during the sixth century and lasted into the fifth. Dendrochronology has produced some precise dates for the Hallstatt period (Hollstein 1973; 1974), notably a series from the Ha D1 barrow-cemetery of the Magdalenenberg, Villingen, Baden (Spindler 1975; 1976; Hawkes 1974). These dates appear to conform to the conventional chronology. French chronology, especially the Vix burial, shows that La Tène I began around 475 B. C. (Peroni 1973, fig. 20; Guilaine 1976b, 21; Hatt and Roualet 1977, 11).

The 'conventional' absolute chronology of my phases in southern Britain is summarised in Table 13.

Table 13

Late EBA/MBA1	15th century B. C.
MBA2	
LBA1	12th century B. C. 11th century B. C.
LBA2	10th century B. C.
LBA3	8th century B. C.
LBA4	7th century B. C.
EIA1	6th century B. C. 5th century B. C.

DISCUSSION: MIDDLE BRONZE AGE

The EBA/MBA transition

The transition from the Early Bronze Age to the Middle Bronze Age in Britain has been characterised by Burgess (1974, 194-198) as a 'hiatus'. Ritual monuments of Neolithic tradition appear to have gone out of use, characteristic Early Bronze Age pottery forms disappeared and attendant burial rites were discontinued. From the upland areas of southern Britain, especially the Wessex lowland, primacy passed to the low-lying areas of the south-east, river valleys and Fen margins, and this may have been accompanied by fundamental changes in land-use (Bradley 1978, 113-117). Discontinuity should not be emphasised too much. There was probably an overlap between the later part of the Wessex culture and the MBA1 Acton Park industry which was geographically separate (see p. 39, 42-3). The distribution of Arreton daggers shows a concentration in Wessex (Burgess and Cowen 1972, fig. 6, 1) but contemporary flanged axes occur sparsely in Wessex and their distribution (*ibid.*, fig. 6, 2) appears to mark the inception of the classic distribution-pattern of metalwork of the Middle and Late Bronze Age in southern Britain with concentrations on the south coast, in the lower Thames valley, the northern part of East Anglia and east Yorkshire. Some continuity should be reflected by the Arreton hoards on the Isle of Wight (*ibid.*, fig. 7) and the MBA2 hoards on the island (Map 22) which is almost devoid of later material.

Pottery types associated with the Wessex culture may have disappeared but Deverel-Rimbury pottery was probably current during the Early Bronze Age and the Middle Bronze Age. Radiocarbon dates and ceramic typology seem to place the origins of Deverel-Rimbury pottery in Early Bronze Age (Burgess 1974, 216-217; Barrett 1976, 291-295), cf. the occurrence of a Collared Urn in the eponymous Deverel barrow (Miles 1826, pl. I, 23), and Deverel-Rimbury pottery may have accompanied poorer burials at the time of the Wessex culture (Barrett 1976, 298-299). The currency of Deverel-Rimbury pottery during MBA2 is confirmed by the fragment of a side-looped spearhead of Rowland's group 2 found with a Barrel Urn on Launceston Down, Dorset (Piggott and Piggott 1944, 60-61, fig. 6; Rowlands 1976, 54, 233 no. 37, pl. 12; Burgess 1976b, 89 no. 13; Barrett 1976, 290), and by the Picardy pins found at St. Lawrence's College, Ramsgate (27), with a Bucket Urn (Burgess 1976b, 89 no. 17; Barrett 1976, 290); there are two side-looped spearheads of group 2 from a cemetery at Mathon, Herefords. (Burgess 1976b, 101 no. 1; Rowlands 1976, 55, 274 no. 162).

For the discussion of relations between Britain and the Low Countries at the EBA/MBA transition we must revert to Early Bronze Age urns and begin with Wessex Biconical Urns (WBU), the type predominant in Wessex (Burgess 1974, 182; Smith 1961, 98-110; Calkin 1962, 35-40, 46-47) and known elsewhere in Britain (ApSimon 1972). WBUs have rarely been found in datable contexts but these appear to be exclusively Early Bronze Age (Smith 1961, 107-108; Burgess 1969, 27) and Gerloff places them in the Camerton-Snowhill phase (1975, 236). The urn from Ringwould, Kent, was found with four faience beads and a slotted incense cup (*ibid.*, 102-103, fig. 1, 3) which allow equation with the Wessex culture. The significance of WBUs lies in their similarity to Hilversum urns (Smith 1961, 110-114), which they

probably inspired. The two groups share bi conical form, bevelled rims and cord ornament; British urns are more convex and more often have lugs or horseshoe handles, though these features occur on Hilversum urns from Vorstenbosch, N. Brabant (Modderman 1959), and Budel-Weert, Dutch Limburg (Glasbergen 1961), respectively. The Vorstenbosch urn and some of the Hilversum sherds from Vogelenzang, N. Holland (Groenman-van Waateringe 1961, 83-85, fig. 45) bear barbed-wire ornament derived from local Beakers (Lanting 1973, 223) and the protruding base common on Hilversum urns is probably also an earlier local feature. The pottery from the settlement at Mildenhall, Suffolk (Clark 1936), has been compared by Smith (1961, 112-113) to that from Vogelenzang and this Dutch site has produced a segmented faience bead (Glasbergen 1969, 30, fig. 12), cf. the WBU from Ringwoud.

The distribution of WBUs and Hilversum urns stretches from Wessex across the Straits of Dover to the southern Netherlands (*ibid.*, fig. 10). Beside the Dutch finds of Hilversum urns there are Belgian examples from the Hoogeinsche Bergen, Weelde, Antwerp (van Impe and Beex 1977, figs. 3, 6), and Maaseik, Limburg (Claassen 1975), both adjacent to the Dutch border, the Kluisberg, Ruien, E. Flanders (de Laet and Roosens 1952, 54-55, fig. 5, pls. IV-V; de Laet 1974, fig. 156), further west, and a French find from Marquise, Pas-de-Calais (Dunning 1936b, fig. 3; cf. de Laet 1961b). The Trevisker sherd from Hardelot, Pas-de-Calais (Mariette 1961; ApSimon and Greenfield 1972, 365, 375), should form part of the same pattern.

The distribution of Hilversum urns on the continent overlaps that of a distinctive group of barrows enclosed by a bank, so-called ringwalheuvelds (van Impe 1976, fig. 1), whose relationship with British barrows has long been recognised (van Giffen 1938b). A Hilversum urn was primary in a ringwalheuvel at Toterfout, N. Brabant, barrow 1B (van Impe 1976, 9 no. 15). The relevant British barrows are disc-barrows (Grinsell 1974, 79; 1941, fig. 1), though van Impe's fourth group of ringwalheuvelds (1976, 11) may be equated with bowl-barrows with an outer bank (Grinsell 1941, 78/79, fig. 1). Most disc-barrows are larger than ringwalheuvelds but a group known as the Dorset type and found between Dorchester and Bridport comprises barrows of about the same size as the continental barrows (Grinsell 1974, 83, 97-98; Smith 1961, 114-117; van Impe 1976, 14). Barrows with causeways, like Hooogeinsche Bergen IV, Antwerp (*ibid.*, 10 no. 20), are also known in Britain (*ibid.*, 15-16; Grinsell 1941, 106-107). The ringwalheuvel at Alphen (73) has produced a flanged axe of Lochham/Sögel date and the Zwartenberg, Hoogeloon, N. Brabant (van Impe 1976, 7 no. 2), has produced a flanged chisel, perhaps from a primary burial (Glasbergen 1954a, 11; 1954b, 167, fig. 72; Butler 1969, afb. 18, right). The flanged chisel is a widespread type in central Europe, usually dated to Reinecke A2 (Abels 1972, 49; Bocksberger 1964, fig. 3, 4; Köster 1965-66, 14-16, Taf. 4, 18-19; Schubert 1973, 53, Taf. 22, 10).

Hilversum urns and ringwalheuvelds in Belgium and the southern Netherlands must have been in part contemporary with barbed-wire pottery and Sögel burials in the northern Netherlands. Radiocarbon dates for barbed-wire pottery go down to 1400 bc (Lanting 1973, 221, fig. 15) while dates for ringwalheuvelds begin by 1500 bc (van Impe 1976, 17). Phase 2 of barrow III at Anner Tol, Schuilingsoord, Drenthe, contained a barbed-wire pot and a grooved ogival dagger, unique in the Netherlands, with an associated C14 date

of 1450 ± 45 bc GrN-6753 (Butler, Lanting and van der Waals 1972, 230-231, 236-238), the latest reliable date for a barbed-wire pot (Lanting 1973, 221-222). The dagger resembles the Camerton-Snowhill type (Butler, Lanting and van der Waals 1972, 236). Barbed-wire pottery is associated with a Sögel arrowhead at Angelslo, Drenthe (Lanting 1973, 221); the Vorstenbosch urn assures some overlap between barbed-wire pottery and Hilversum urns (*ibid.*, 223). Though inhumations are known, cremation was the usual burial rite in the Hilversum culture of the southern Netherlands (Butler 1969, 54; de Laet 1974, 308), while flexed inhumation was usual with barbed-wire pottery (Lanting 1973, 223-232).

Timber circles around barrows were common throughout the Netherlands during the Early and Middle Bronze Age (Glasbergen 1954b, 17, fig. 45; Butler 1969, 51-53). British records are sparser (Ashbee 1960, 60-65, fig. 54, 53, appendix IV), with associations from Beaker to Deverel-Rimbury. Some classes of timber circle may have been necessary for the revetment of barrows built of unstable material (Drewett 1976, 141) so cultural contact may not be necessary to explain similarities between Britain and the continent. The single circle of widely-spaced posts appears to have consistent associations with the Wessex culture in Britain; the example at Poole, Dorset, around a bell-barrow, has a C14 date of 1260 ± 50 bc GrN-1684 (Vogel and Waterbolk 1964, 356), consistent with the Dutch dates for this type of monument (Butler 1969, 52; Vogel and Waterbolk 1963, 188-189), Glasbergen's third type, the most numerous in the Netherlands where it is common in Drenthe and N. Brabant (Glasbergen 1954b, 19-42). Single circles of widely spaced posts are also known in Belgium (de Laet 1974, 313-314; van Impe and Beex 1977, 33-34), in adjacent parts of Germany (Hinz 1974, Bild 6) and in Denmark (Glasbergen 1954b, 76-79) but not all these examples are of Early or Middle Bronze Age date.

Pottery and burials show a consistent relationship between southern Britain and the southern Netherlands with the adjacent parts of Belgium at the time of the EBA/MBA transition, the continental Lochham/Sögel phase; this relationship appears to have been strong enough to imply movement of population from Britain to the Netherlands (Glasbergen 1954b, 122-123; 1957; Smith 1961, 118; Burgess 1974, 182). Burgess has emphasised the difficulty of correlating this movement with MBA bronzes (*ibid.*, n.106) but Belgian finds of Arreton axes may be relevant (Desittere 1974c, 17-18) and the Voorhout hoard (85) could be contemporary, despite its more northerly British origin.

Material of the later Early Bronze Age is sparse in north-eastern France (Blanchet 1976b, 48); of many barrows known, especially on the coast of the Pas-de-Calais (Gaucher and Mohen 1974, 73, ill. 49), only a single example can confidently be attributed to this period. Excavation in 1820 at Hervelinghen, Pas-de-Calais, produced four skeletons and a dagger blade, though the association appears to be unproven (*ibid.*, 27, 73, 115, Hervelinghen 3, ill. 12b; Gaucher 1976, 576, fig. 1, 1). The dagger bears pointillé ornament, an Italian feature, and may be of central European origin (Mohen 1972, 444-446, fig. 1, 1; Hundt 1971, 18, Abb. 3, 4; Gerloff 1975, 117-118, 249 no. 3, pl. 56A); it should be of late Early Bronze Age date and may witness Wessex influence in north-eastern France.

The lack of Early Bronze Age material in north-eastern France is relevant to Gerloff's claim (*ibid.*, 235-243) that British Early Bronze Age pottery with finger-tipped ornament was derived from the west-Alpine area. We should remember ApSimon's caveat that possible insular origins have not yet been worked out in detail (1972, 154). Such coarse pottery occurs in the western Alps and in southern Germany (Hundt 1957, 39-40, Abb. 4) but it is regularly associated with fine wares (*ibid.*, 30-39, Taf. 12-13) and the diversity of this pottery of the *frühe bis mittlere Bronzezeit* is emphasised by examination of two large groups from the Kirchberg, Reusten, Württemberg (Kimmig 1966, 29-39), and Arbon-Bleiche, Thurgau (Fischer 1971, 14, 18-20). At the Kirchberg handled jars (Kimmig 1966, Taf. 15-18, 34) and decorated fine wares (*ibid.*, Taf. 31, 35-38) occur alongside vessels with fingertipped cordons (*ibid.*, Taf. 19-26) and knobs (*ibid.*, Taf. 27); the same variety is present at Arbon-Bleiche with handled jars (Fischer 1971, Taf. 16) and fine wares (*ibid.*, Taf. 10-15, 18-19, 30, 33-35) alongside coarse wares (*ibid.*, Taf. 20-26, 36-39). It seems unlikely that such a population movement as that proposed by Gerloff (1975, 242-243) would have introduced only coarse wares and there is little convincing evidence from the intermediate area.

The rock-shelter at Les Roches, Videlles, Essonne, has produced pottery in stratigraphic sequence (Bailloud 1958; Bailloud and Coiffard 1967). The sequence from *locus* 5 shows occupation above late Neolithic levels, though the deposits do not appear to be completely sealed. *Couche* C contained some Seine-Oise-Marne material as well as some *Bronze Moyen*, but also included pottery which could be isolated as *Bronze Ancien* (*ibid.*, 395-401); cordoned jars, knobbed jars and horseshoe cordons were stratified (*ibid.*, 398-400; Bailloud 1958, fig. 3, 12), but more forms: spoons, convex bowls, carinated and sub-biconical jars, including a handled vessel, were assigned to *Bronze Ancien* on typological grounds (*ibid.*, 200-205, figs. 5; 6, 1-9; Blanchet 1976b, 46, fig. 10, 7-14). This assemblage from Videlles contains few finger-tipped cordons and its diversity cannot be matched at Fort-Harrouard (Bailloud 1958, 205; Bailloud 1967, 400-401) in the assemblage cited by Gerloff (1975, 240). The pottery from a group of pits at Cuiry-lès-Chaudardes, Aisne, has been dated to *Bronze Ancien* and derived from central Europe (Blanchet 1976b, 48, 53; Gaucher 1976, 576, fig. 1, 5). This assemblage contains vessels with plain and finger-tipped cordons, horseshoe cordons, knobs and impressions (Letterle 1976, pls. 40-47) and one sherd is compared to Collared Urns (*ibid.*, 181, pl. 40, 2). The most diagnostic find, unnoticed in earlier accounts, is the stone mould for an anvil of Porcieu-Amblagnieu type (List 16, 6) probably of early *Bronze Moyen* date (see p. 61).

Later MBA

Associations with MBA2 metalwork (see p. 273) indicate that Deverel-Rimbury pottery was current during the later Middle Bronze Age in southern Britain but new developments were already taking place (Barrett 1976, 294-295) exemplified by the decorated pot with the Birchington hoard (23) and the post-Deverel-Rimbury pottery with the narrow-bladed looped palstave in the Angle Ditch (see p. 49).

Continued relations with the Hilversum culture have been postulated (Smith 1961, 112) and the Bucket Urn in the Ramsgate find (27) may be

compared to Dutch Drakenstein urns. These urns, convex or bucket-shaped, usually with an inturned rim which may bear finger-tipped ornament, sometimes with plain or finger-tipped cordons, follow Hilversum urns in the conventional pottery sequence of the southern Netherlands (Glasbergen 1969, 18-20, fig. 7; Butler 1969, 47-48; de Laet 1974, 326-330). The conventional terminology has not met with universal approval (Louwe Kooijmans 1972-73, 31 n. 75). The Drakenstein urn appears to belong to the Hilversum type (Glasbergen 1969, fig. 7) and the urns from Weelde, Antwerp, show that a rigid distinction may be misleading; the secondary burial in barrow I had a cord-ornamented Hilversum urn with a cordoned urn almost of Drakenstein form, while the urn with the secondary burial in barrow II was of Drakenstein form but bore cord-ornament (van Impe and Beex 1977, 23-24, figs. 3; 6; 15). The south Dutch sequence is not reflected in the north where undiagnostic coarse ware, Kümmerkeramik, is the rule during the Middle Bronze Age (Butler 1969, 73, aff. 5; Waterbolk 1962, 11; 1964, 110-113). There was also contrast in burial-rite between the northern and southern Netherlands; while cremation continued in the south (Verwers 1969, 20 n.18; 1972, 26-30, errata), inhumation persisted in the north, most characteristically in so-called 'family barrows' (Waterbolk 1962, 11, Abb. 3; Butler 1969, 64-66), the best-known adjacent to the settlement at Elp, Drenthe (Waterbolk 1961a, 126-127, fig. 1). Butler (1969, 62-64) has emphasised the relationship of the north Dutch Elp culture of the Middle Bronze Age with the adjacent 'Tumulus' groups of north-western Germany. The contrast between the northern Netherlands, looking east, and the southern Netherlands with Belgium, where pottery and burial-rite derived from or related to those of the British Middle Bronze Age, appears to reflect the similar contrast in Middle Bronze Age metalwork, especially palstaves.

Much more extensive is the evidence provided by MBA2 metalwork for contacts between south-eastern England and north-eastern France but comparable evidence from pottery and burials is scarce. At Videlles there is Kerbschnitt pottery comparable to that from Hagenau (Bailloud 1958, 206-208, figs. 7-8); a little to the east such Tumulus pottery is associated with two Tumulus daggers at Marion-des-Roches, Forest of Fontainebleau, Seine-et-Marne (Bailloud 1961). There appears to be similar pottery from Fort-Harrouard (Gaucher 1976, 577), though Sandars was doubtful (1957, 269). More relevant to Britain appears to be the Eramécourt group (Blanchet 1976b, 54-55). One barrow from the eponymous site in the Somme produced a pear-shaped cremation urn with horseshoe cordons (*ibid.*, fig. 8). There are two similar urns from a group of eight burials at Carrefour d'Aumont, Forest of Compiègne, Oise (*ibid.*, 52, fig. 10, 1-2), with a cordoned urn and a broad-mouthed sub-biconical urn (*ibid.*, fig. 11, 3-4; Blanchet and Lambot 1975, 49-50). At Le Marteau, Pontavert, Aisne, a double ring-ditch barrow had a central cremation in a high-shouldered urn with upright neck and horseshoe cordons; this burial was stratigraphically earlier than an unlooped socketed axe of probable LBA1 date (List 53, 6). A sherd with a horseshoe cordon came from a similar double ring-ditch at Le Grand Marais, Bucy-le-Long, Aisne (Blanchet 1976b, 52, fig. 12, 5). The material from Cuiry, Aisne, may belong to this group (see p.276) and several megalithic sites in the Paris Basin have produced pottery with cordons and horseshoe

cordons which may be of Bronze Moyen date (*ibid.*, 52, fig. 12, 1-3; Bailloud 1974, 351-352).

The form and ornament of the Pontavert urn can be matched by a cremation urn from Junction Pit, Farnham, Surrey (Lowther 1939, 165-169, fig. 68, pl. XV), inverted, set in a stone cist and covered by a barrow. Cremations in cists occur at Eramécourt (Blanchet 1976b, 41-45, 54, fig. 8) and at the Carrefour d'Aumont cemetery (*ibid.*, 52). Double ring-ditches are known at Cys-la-Commune, Aisne (Joullié 1962), with a C14 date of 1370 \pm 110 bc Gsy-91 (Coursaget and Le Run 1966, 132), and Conchil-le-Temple, in the valley of the R. Authie, Pas-de-Calais (Piningre 1977), as well as at Pontavert and Bucy-le-Long in the Aisne valley. Double ring-ditches occur in river valleys in England (Leeds 1936, 13-15, fig. 3; 16-18, fig. 5; Field 1974, 63) but are of uncertain date. Blanchet considers that British influence on the Eramécourt group was important (1976b, 54) as does Burgess (1976b, 99).

Burial-rite shows similarity between Picardy and southern Britain and the pottery of the Eramécourt group has features in common with Britain, though perhaps closer to Early Bronze Age urns than to classic Deverel-Rimbury forms; the Farnham urn is not a typical insular form. Such similarity should reflect the close relations between southern Britain and the Somme-Oise-Aisne area which are demonstrated by MBA2 metalwork. The chronological position of the Eramécourt group is not certain but it may not be confined to the Early Bronze Age as Burgess implies (1976b, 99). The apparent lack of pottery and burials of possible Middle Bronze Age date in Normandy, with the possible exception of Fort-Harrouard, frustrates such comparisons as can be made with Picardy. It may now be unnecessary to seek continental inspiration for Deverel-Rimbury pottery (Barrett 1976, 295).

DISCUSSION: LATE BRONZE AGE

Earlier LBA

Radiocarbon dates suggest that the Deverel-Rimbury complex ended about 1000 bc (Barrett 1976, 291-293), though some continuation may not be excluded. The 'post Deverel-Rimbury' phase is represented by plain, thin-walled jars with upright or inturned hooked rims (*ibid.*, 294; Bradley and Ellison 1975, 103-104, fig. 3:5, 1-3, 5-10, 15-18, 24, 31-32) and, somewhat later, broad-mouthed shouldered jars (*ibid.*, 105-106, 113, fig. 3:5. 13-14, 30). Cunliffe identifies the pottery of the early part of the Late Bronze Age as of Deverel-Rimbury tradition (1974, 24). Neither scheme has yet been elucidated in detail.

Associations of characteristic items of LBA1 or LBA2 metalwork with pottery or burials in southern Britain are scarce. Two urns from Surrey contained bronze discs with rectangular loops (Lowther 1939, 178-179, fig. 74; 1949; Burgess 1976b, 90 nos. 22-23); these discs are small, 5-6 cm in diameter, and their chronology and affinities are uncertain, though Burgess (*ibid.*) postulates a LBA1 date. At Queenford Farm, Dorchester, Oxon., a skeleton was pierced by the tip of a straight-based basal-looped spearhead (*ibid.*, 101 n. 3; Ehrenberg 1977, 37 no. 54, fig. 15, pl. 1) and at Tormarton,

Gloucs., two skeletons were found, one pierced by a side-looped spearhead, and collagen from this skeleton gave a C14 date of 977 ± 90 bc BM-452 (Knight, Browne and Grinsell 1972; Burgess 1976b, 89 no. 15). These 'war cemetery' burials were probably distinct from any peaceful rite. Burgess is impressed by the number of possible inhumations of Late Bronze Age date and denies the possibility of continuity from Early Bronze Age inhumation because of the lack of inhumation burials of the Acton Park phase (*ibid.*, 95). However, the inhumation burials of the later Early Bronze Age (*ibid.*, 95 n. 61) may not be far removed in date from the Acton Park phase and it seems unreasonable to deny the possibility of continuity to MBA2 inhumation burials such as Hollicondane (26) and Hanley Cross Barrow (35). Burgess emphasises the close links between southern Britain and northern France indicated by MBA2 and LBA1 metalwork and derives the "new" inhumation rite from eastern French Bronze Final I inhumations and from Savory's early Urnfield hillfort-builders in Normandy (*ibid.*, 97-98).

Even if it were necessary to seek a continental origin for MBA2 inhumation in southern Britain, such an origin can scarcely be sought in northern France, for the Pontavert burial (see p. 277) suggests that the cremation tradition of the Eramécourt group was still current at this time, perhaps as late as Bronze Final I. Burials of Bronze Final I, Gaucher's Saint-Gervais culture, are predominantly inhumations, but they are not found beyond the Marne (Gaucher 1976, 577-582). Evidence for Savory's hillfort-builders is scarcely substantial enough to support the introduction of a new burial rite (see p. 297-9).

Pottery of the earliest Urnfield phase in France, CUI of Kimmig, Bronze Recent of Chertier, the first Urnfields of Sandars, does not suggest Urnfield influence beyond the Marne. This period, broadly contemporary with Bronze Final I/Reinecke D, is characterised by pottery with rilled decoration (*cannelée*, *leicht gerillte*, *leichte Reifung*), often associated with poppy-head pins and collared pins (Kimmig 1951, 77-81; Sandars 1957, 116-154; Unz 1973, 56-60). Rilled ware is not confined to this early phase (Sandars 1957, 130; Daugas and Petrequin 1970; Unz 1973, 79; Chertier 1976, 157) but its appearance has usually been interpreted as Urnfield intrusion (Sandars 1957, 130-131, 152-154; Unz 1973, 6-7); Unz prefers an origin in the Hagenau area (*ibid.*, 57-58). There are two rilled-ware vessels from Videlles, a funnel-neck urn and a beaker with everted rim (*ibid.*, 118, Fundliste 20; 112, Fundliste 16; 114, Fundliste 17; Bailloud 1958, fig. 7, 15; Bailloud and Coiffard 1967, 406, fig. 16, 5), which appear to be the most north-westerly of a group of finds from the upper Seine valley (Unz 1973, Karte 4). The sherd from Upper Chapel, Brecknock, compared by Savory (1958a, 47, fig. 5; 1971, 23; 1976a, 45, 55 no. 12, fig. 40, 9) to French early Urnfield rilled ware, appears remote from this distribution.

Contemporary with rilled ware are a few vessels with stamped or Kerbschnitt ornament (Unz 1973, 45, 112, Fundliste 15), perhaps related to Middle Bronze Age Kerbschnitt pottery from Videlles (*ibid.*, 45 n. 325), though dated equivalent to Reinecke D (*ibid.*, 66). Beyond the Paris Basin there is only a single example of this group, a Kerbschnitt beaker, rarely recognised since its original publication in the first volume of Germania (Behrens 1917; Durvin 1976; Unz 1973, Taf. 36, 3; Blanchet 1976a, fig. 35, 23).

During Bronze Final II cremation becomes more common in the Paris Basin and the true Urnfield burial-rite becomes dominant (Gaucher 1976, 580-581). The cremation cemetery at Vieil-Arcy, Aisne, belongs to this phase and has classic Urnfield pottery (Blanchet 1976a, 36, fig. 35, 15-10). There is a Ha A2 feeding-bottle, probably of middle Rhine origin at Saint-Pierre-en-Chastre (171) and a little pottery of this period from Videlles (Bailloud and Coiffard 1967, 406, fig. 16, 6-8). The LBA2 sword from Mautort, Abbeville, Somme (List 111, 47) may have been from a burial. Urnfield influence from eastern France represented by pottery or burials seems scarcely to have penetrated north-eastern France during LBA1 or LBA2.

In southern Belgium inhumations in caves or under stone-built barrows, marchets, was current during the early part of the Late Bronze Age (Mariën 1969; 1970, 29-46; de Laet 1974, 366-369). Classic Urnfield pottery, probably of middle Rhine origin, appeared at Han (194) during Ha A2 but not accompanied by the Urnfield cremation burial-rite (see p. 283). Evidence for Ha A Urnfield pottery or burials on the lower Rhine is sparse. In the Neuweid basin Desittere (1968, 17, fig. I) recognised no material earlier than Ha A2, though Joachim (1973a) has identified Ha A1 burials. Only a little Ha A pottery can be recognised in Desittere's groups in the south-western Loess zone (1968, 19-20) and between the R. Düssel and the Siebengebirge, the hills on the north-western margin of the Westerwald (*ibid.*, 24-25). Kimmig has emphasised how little Ha A material is present in these two groups (1970, 42-43). Ha A pottery is also scarce in the north-western group and is represented principally by beakers and cylinder-neck urns in the southern part of N. Brabant (Desittere 1968, 30-31, fig. III, 1-2); Kimmig considers that this cannot be sufficient to represent a distinct Ha A Urnfield phase (1970, 45). Kimmig is also cautious (*ibid.*, 49) about the Ha A date proposed by Desittere (1968, 65-66, fig. XI) for the early part of his Flemish group.

The Late Bronze Age pottery sequence in the southern Netherlands continues the Hilversum-Drakenstein sequence with the devolved form known as Laren urns (Butler 1969, 48; Waterbolk 1969, 20) and is later represented by coarse pottery known at Grobkeramik (Desittere 1967), perhaps derived from the earlier urns (Verwers 1969, 21-22; 1972, 30), though Desittere doubts this (1974a, 109-110). In the western Netherlands some smooth thin-walled jars from Velsen, N. Holland, have been identified as Late Bronze Age (Jelgersma, de Jong, Zagwijn and van Regteren Altena 1970, 140, fig. 37) and Louwe Kooijmans (1972-73, 35, 342) has recognised similar pottery from a dozen sites in Holland but this pottery has not yet been dated precisely,

In the northern Netherlands Kümmerkeramik of Middle Bronze Age tradition continued into the Late Bronze Age (Butler 1969, 82; Verwers 1969, 23; Louwe Kooijmans 1972-73, 34-35). Cremation was now the usual burial-rite; after some transitional burials (Waterbolk 1962, 13) the first characteristic group is known after the cemetery from Gasteren, Drenthe. Cremations, urned or unurned, occur in rectangular mortuary houses surrounded on three or four sides by a ditch (*ibid.*, 15-16, Abb. 5-6) and a coherent pottery assemblage is associated (*ibid.*, 17-18, Abb. 7-9). A Ha B1 date is usually quoted (*ibid.*, 18 n. 31; Butler 1969, 82) on the basis of the pin (List 92, 3) but this may now imply a Ha A date (see p. 125). Gasteren burials appear to

be confined to the Netherlands and its borders, though the pottery may be compared with vessels from the North Frisian island of Marsum, associated with brooches of MIII (Kersten and La Baume 1958, Taf. 67, 3, 17; Randsborg 1968, 82-83; Laux 1973, 35-36) and MIV (Kersten and La Baume 1958, Taf. 67, 10-13; Randsborg 1972, 37-39, 83, Appendix 13), and from Ardleigh, Essex (Erith and Longworth 1960, fig. 7, H16, D21). A Gasteren burial from Holsloot, Drenthe, gave C14 dates of 930 ± 70 bc and 940 ± 50 bc GrN-1562-63 (Clason 1959; Vogel and Waterbolk 1963, 192).

Local continuity seems to have been characteristic of most of Belgium and of the southern Netherlands during the earlier part of the Late Bronze Age. The scarce Urnfield pottery in Belgium can be matched by a few bronzes. The northern Netherlands shared some features of pottery and burial with adjacent parts of northern Germany at least at a developed stage of this phase.

Later LBA

Evidence is scarce for burials of Gaucher's Bronze Final III Plainseau culture (1976, 583). There are Urnfield cremation cemeteries of this phase at Vieil-Arcy and Maizy-sur-Aisne, Aisne (Blanchet 1976a, 38), and swords from Mouy, Oise, Carp's Tongue (List 158, 9), and Heilly and Picquigny, Somme, solid-hilted (Lists 150, 4; 153, 5), may have been found with burials (Gaucher and Mohen 1974, 80; Blanchet 1976a, 38). Other items of Late Bronze Age metalwork may have come from burials and other records of burials, including some in caves, could be of Late Bronze Age date (Gaucher and Mohen 1974, 81-84).

Bronze Final III pottery occurs on several hillforts in north-eastern France: Fort-Harrouard, Eure-et-Loir (Sandars 1957, 274-279; Gaucher 1976, 583), Saint-Pierre-en-Chastre (171), Catenoy (Blanchet 1976a, 38; Sandars 1967, 279-280; Bailoud 1956) and Saint-Sauveur (Blanchet 1976a, 38), Oise. The settlement at Nanteuil-sur-Aisne, Ardennes, has produced pottery of Bronze Final IIIb (*ibid.*, 38, fig. 35, 1-10) and a C14 date of 870 ± 90 bc (B. Lambot). Most of these sites have produced coarse and fine wares; full publications should allow the establishment of a more refined chronology and comparison with pottery in adjacent areas. Sandars lists a few poorly-documented finds (1957, 280).

The lower Rhine area has provided extensive remains of burials and associated pottery from the Late Bronze Age; associated bronzes are rare and chronology relies on the typology of the pottery, discussed in greatest detail by Desittere (1968). The title of this work, 'De Urnenveldenkultuur in het gebied tussen Neder-Rijn en Noordzee', betrays the author's conviction that he is dealing with an extension of the Urnfield culture of central Europe, though this has been debated (Verwers 1969; Desittere 1974a; de Laet 1976, 193).

Desittere's principal group is his north-western group extending from the Rhine valley in the east and north to the Demer in the south and almost to the Scheldt in the west (Desittere 1968, Kaart 7). This group is best defined by the appearance of local Kerbschnitt pottery in Ha B (*ibid.*, 30). Desittere recognises some classic Urnfield pottery forms: lidded cups, sometimes with upright perforated lugs, Deckeldosen in German, dekseldozen in Dutch

(*ibid.*, 31-33, fig. III, 3); small biconical bowls with broad mouths and everted rims, similar to bowls of type XII in Vogt's Swiss typology (*ibid.*, 33-34, fig. IV, 1); cylinder-neck, conical-neck and funnel-neck urns (*ibid.*, 40-45, figs. VI-IX); handled cups (*ibid.*, 37-38, fig. V, 2); coarse-ware jars used as urns (*ibid.*, 38-39, fig. V, 1) and conical-profile bowls (*ibid.*, 39-40, fig. IV, 4). Kerbschnitt (kerfsnede) occurs on many forms in the north-western group; triangles, hanging curves and lines are known, though Desittere restricts the term Kerbschnitt to triangular motifs (*ibid.*, 47). Verwers (1969, 21) suggests that Kerbschnitt should apply to all excised, as opposed to 'scratched', ornament. Triangular motifs are found over most of the area of the north-western group, except the extreme west, but the principal concentration is from the lower Roer west into N. Brabant (*ibid.*, 49, Kaart 8), little different from the concentration plotted by Kersten (1948, Abb. 4). The origin of Kerbschnitt pottery is presumably to be sought in the south German and Swiss Urnfield cultures (*ibid.*, 48-49; Verwers 1969, 21; Kimmig 1970, 46). Kimmig questions some of Desittere's identifications of north-western forms as Ha B Urnfield types (*ibid.*, 45-47).

Ring-ditches are characteristic of Ha B cemeteries in N. Brabant and Belgian Limburg, usually annular, with the opening to the west if penannular; long ditches also occur, though burials may be outside ditches and ditches may occur without any traces of a burial (*ibid.*, 40-56). Verwers (1966b) distinguished two groups of long ditches, the Riethoven type with average dimensions of 15.5 x 5.5 m, and the Goirle type, 42 x 3.8 m; the former often contain burials and were interpreted as funeral monuments (*ibid.*, 55), while the latter were interpreted as ritual fields (*ibid.*, 56). Desittere (1968, 56) was sceptical of the validity of this division and pollen analysis does not support the interpretation of Goirle ditches as fields (Bakels 1975; Verwers 1975, 33). There is an intermediate group of long ditches (*ibid.*, 32; Brunsting and Verwers 1975, 63).

C14 dates for long ditches include 870 \pm 50 bc GrN-4919 and 830 \pm 50 bc GrN-4920 from Goirle, N. Brabant (Verwers 1966b, 40), and 880 \pm 35 bc GrN-6950, 850 \pm 35 bc GrN-6952, 905 \pm 35 bc GrN-6954 and 900 \pm 50 bc GrN-1764 from Laag Spul, Hilvarenbeek, N. Brabant (Verwers 1975, 31). Ring-ditches provide dates of 920 \pm 50 bc GrN-4921 at Goirle (Verwers 1966b, 42) and 935 \pm 35 bc GrN-6951 and 840 \pm 35 bc GrN-6955 at Laag Spul (Verwers 1975, 31).

Cremation is the rule in the north-western group, in an urn, a perishable container, a pit or a Brandschüttungsgrab (brandafvalgrab), in which part of the cremated remains are placed in the urn and the remainder, still mixed with the pyre, placed in the grave-pit alongside the urn. Cover-vessels or stone cover-slabs may be employed. The cremated remains may be placed in a smaller vessel, not in a large urn (Desittere 1968, 57-59). The last feature is interpreted as classic Urnfield ritual by Desittere.

The Flemish group in Ha B is distinguished from the north-western by details of pottery and burial (*ibid.*, 66-72), e.g. the absence of ring-ditches.

Kimmig (1970, 49) is reluctant to recognise classic Urnfield burial-rite on the lower Rhine, emphasising details of peripheral structure and of the burials themselves. Verwers (1969, 18-20) stresses continuity from the local Middle Bronze Age and he calculates that unurned cremations were more

common during the Late Bronze Age, with urned cremation predominant only during the Early Iron Age; Middle Bronze Age barrows often formed the core of Late Bronze Age cemeteries. Desittere (1974a, 110-111) argues that the ring-ditches and even the long ditches of the north-western group may have been derived from the middle Rhine area and (*ibid.*, 117-124) questions the value of calculations concerning urned and unurned cremations.

Desittere originally grouped the remaining Belgian Urnfield pottery together as the Urnfield culture in central and southern Belgium (1968, 73-75, Kaart 6), but de Laet has distinguished a central Belgian group and a Famenne group (1974, fig. 175). The central Belgian group lies north of the Meuse in Hainaut and in eastern Brabant; flat burial is usual, as in Flanders, but ring-ditches appear to be absent; there is no pottery earlier than Ha B (*ibid.*, 370-371; Desittere 1968, 75-76). The most important site of the Famenne group is Han (194) where fine Urnfield pottery of Ha B1 date and probable middle Rhine origin is known. Fine ware is also present at the Trou del Leuve (or Heuve), Sinsin, Namur (Mariën 1973b, 277-279, fig. 8). The Han pottery has not been published in detail; most appears to be Ha B (*ibid.*, 281). Coarse wares are also present at the Trou de l'Ambre in the nearby Bois du Werimont, Eprave (Mariën 1970, 41-42, fig. 10), in association with inhumation burials (*ibid.*, 29-37, 45-46) which were also found at Sinsin (Mariën 1973b, 279). It is strange that the most characteristic Urnfield pottery from Belgium should not be associated with cremation; Mariën proposes that the gold pendants from Han (see p. 214) provide a link with Urnfield inhumation burial at Wolmesheim, Kr. Landau, Rheinland-Pfalz (1969, 407-408; 1970, 46; 1973b, 277-279), though the local inhumation-rite in marchets, perhaps still current at this time (de Laet 1974, 368-369), may also have been influential.

Mariën is confident that the presence of Urnfield pottery at Han implies some population movement (1973b, 281). This could be accompanied by some bronzes of Urnfield type (*ibid.*, 277), e.g. many of the pins, single-edged knives, Bourget arrowheads and the gold pendants. The socketed axes are probably local Belgian types, not so western as Mariën has implied (*ibid.*, 274-276). Undoubtedly western are the Thames swords, bag-shaped chapes, large spearhead and long ferrule. Mariën has long stressed the distinction between the Meuse valley, with its easterly affinities, and the Scheldt valley, with its westerly affinities (1952, 268,afb. 248; 1973a, 129 n.11), and this division may still be made (Desittere 1974a, 111-113). The possibility of direct contact between the Famenne group and the middle Rhine Urnfield area situated directly to the east could still allow contact between the north-western group and the middle Rhine to be minimised. We await with interest the results of comparison between pottery of the Famenne group and Urnfield pottery of north-eastern France, especially at Nanteuil-sur-Aisne across the Ardennes.

Cremations inside ditches of key-hole shape occur in Westphalia and in the eastern Netherlands with pottery of biconical profile (Waterbolk 1962, 18-19, figs. 10-13; Butler 1969, 82-83; Wilhelmi 1974). Similar pottery has been found in cemeteries of the north-western group and the key-hole ditches should be dated to Ha B/MV (Desittere 1968, 56-57, 63-64) though there appears to be no detailed study of their chronology.

Beside the Gasteren group and key-hole ring-ditches, the third group of Late Bronze Age burials in the northern Netherlands is characterised by zweiheuklige Terrinen containing burials usually secondary in earlier barrow or in stone settings (Waterbolk 1962, 18-23; Butler 1969, 82-83). Associations of razors and tweezers suggest a MV date (see p. 220-2), and affinities with north-western Germany are also demonstrated by the distribution of zweiheuklige Terrinen (Tackenberg 1939, Karte 1). A few vessels of south Dutch character, with incised, stamped or Kerbschnitt ornament, occur in the northern Netherlands associated with burials in ring-ditches (Waterbolk 1962, 23-25, Abb. 16; Desittere 1968, 61-62; Butler 1969, 83); cemeteries with ring-ditches and long ditches are dated to the end of the Late Bronze Age in the northern Netherlands, late Ha B (Waterbolk 1962, 25-28; Butler 1969, 83-84). It seems possible that Waterbolk's chronological sequence of grave-structures is a little too rigid (cf. Desittere 1968, 63 n. 391; Wilhelmi 1974) but the pottery and burials of the northern Netherlands during the later Late Bronze Age appear to reflect the local distributions, the distinction from the southern Netherlands and the relations with north-western Germany exemplified by LBA3 bronzes.

Evidence for burials of the later part of the Late Bronze Age in southern Britain is scanty. Some cremations have C14 dates which cover this period (Burgess 1974, 218; Cunliffe 1974, 27; Barrett 1976, 291, fig. 17.1). A secondary cremation in a barrow on Court Hill, Tickenham, Somerset, gave a date of 715 ± 130 bc I-5734 and a tanged leather-working knife (List 131, 27) was found at the base of the turf covering the barrow (Green 1973). Some of the possible inhumations with metalwork recorded by Burgess are of LBA3 date (1976b, 83-91 nos. 1, 3-5, 7-8, 10, 20, 26, 31-32; 101 nos. 7-8) but few are proven beyond doubt. The Streeton-on-the-Fosse find is reliable (see p.) but its date is not. The find in the bank of the Thames at Wallingford, Berks. (*ibid.*, 101 no. 7) was from a rubbish deposit (fieldwork by R. J. Bradley assisted by the writer) and this find cannot be regarded as a regular inhumation burial. It may be explained as the same kind of apparently casual deposit as practised on Iron Age hillforts (Cunliffe 1976a, 215) and, to reverse the suggestion of Burgess (1976b, 101), elucidation of these Iron Age burials may clarify the position for the later Bronze Age. Burgess (*ibid.*, 99) points out the negative evidence for burials which unites southern Britain and north-eastern France at this time in contrast with Belgium and the Netherlands where cremation was the regular rite. Further research may reveal an extension of Urnfield burials into north-eastern France to show whether this negative evidence is apparent or real.

The removal of Deverel-Rimbury pottery from the Late Bronze Age to the Middle Bronze Age left an apparent gap in the pottery sequence of southern Britain. Pottery classed as 'Early Iron Age' or 'Iron Age A', dated to the Hallstatt period when Deverel-Rimbury pottery was still regarded as contemporary with the late Urnfield period, remained within the seventh- to fifth-century date-range. When such pottery was found on sites with Late Bronze Age metalwork the traditional terminology proved inadequate and undue longevity was attributed to bronzes which could be dated more accurately than the pottery; this was exemplified in the discussion of Ivinghoe Beacon, Bucks. (Cotton and Frere 1966-70, 200-203). Harding (1974, 129), in a chapter

entitled, "The Late Bronze Age problem ...", referred to, "the lack of a substantial body of ceramic evidence for (the Late Bronze Age) which might provide a springboard for the study of early Iron Age pottery".

Stratified associations of pottery with Late Bronze Age metalwork, as opposed to its occurrence on the same site, are rare and often uninformative. Records of hoards found in or with pots are numerous but the preservation of enough sherds to enable reconstruction of the vessel are rare; in isolation, the pots with the Worthing and Isleham hoards are inadequate as a basis for a Late Bronze Age pottery typology (*ibid.*, 131) and the nature of associations of pottery with bronzes at sites such as Scarborough, Minnis Bay and Brigg are equivocal (*ibid.*; May 1976, 114, fig. 62).

Metal prototypes, one member of what Avery (1974, 63) has called, "the Unholy Trinity of Iron Age pottery dating studies", are often invoked. Harding invoked situlae as prototypes for shouldered jars (1974, 138-142) and cauldrons for a group of pottery vessels found in the upper Thames valley (*ibid.*, 142-145, fig. 38). The Welby cup (List 164, 1) is derived from pottery furrowed bowls by Harding (*ibid.*, 149-151) and Champion (1975, 136), though at widely differing dates, while Cunliffe (1974, 31-33) has derived the entire Wessex furrowed bowl group from the Welby cup and tripartite vessels from the cast bronze cups in the Glentanar hoard (List 164, 3) and proposed the existence of hypothetical Ha C bronze bowls in Britain (*ibid.*, fig. 3:3, 1). It must be emphasised that the regular bronze vessels of the Late Bronze Age in Britain were large sheet-bronze buckets or cauldrons and small cast-bronze vessels were rare (see p. 192-3). Fine ceramic cups or bowls probably complemented the large bronze vessels and the use of haematite coating may have sought to imitate bronze (Bradley and Ellison 1975, 116-117) but the small cast-bronze cups should have imitated vessels more usual in pottery, while the large sheet-bronze vessels need not have required pottery skeumorphs. If relationship between ceramic vessels and cast-bronze cups is admitted the relevant pottery should have been current during LBA3.

Rare groups of pottery have traditionally been regarded as alien to both Deverel-Rimbury and Early Iron Age traditions, e.g. site B at Plumpton Plain, Sussex (Hawkes 1935, 46-59) but the precise date and affinities of this group are still somewhat uncertain (O'Connor 1973-75, 240). Cunliffe prolongs Deverel-Rimbury coarse wares to the eighth century when he has the appearance of angular bowls (1974, 24, 29-31, fig. 3:1) at such sites as Plumpton Plain B. In the Early All Cannings Cross group convex jars with inlaid ornament are derived from late Urnfield forms of eastern France (*ibid.*, 31, fig. A:2, 1-9), though there is little intermediate material between Wiltshire and the comparable Jura pottery (Sandars 1957, 214-215, fig. 54, 7-8). Barrett continues his Late Bronze Age sequence with the re-emergence of finger-tipped ornament, rare during the early first millennium outside Wiltshire and Dorset, alongside the appearance of angular fine-ware bowls during the eighth and seventh centuries (Bradley and Ellison 1975, 107-108, 114-115).

New excavations on sites in the Thames valley have enabled Barrett to construct a detailed Late Bronze Age pottery sequence which includes association with LBA3 bronzes at Runnymede Bridge (Longley 1976) and Petter's

Sports Field (M. O'Connell), Egham, Surrey. Runnymede Bridge has produced C14 dates of 670 ± 70 bc and 800 ± 70 bc (D. Longley). This sequence has not yet been published in detail but it should allow pottery from old sites in the Thames valley, and elsewhere, to be dated with more confidence. In turn, this will allow comparison with continental pottery to be made with more confidence. There is a vessel in the form of a deckseldoos, apparently unique in Britain, as an accessory vessel with a secondary burial in Ring III at Ardleigh, Essex (Couchman 1975, fig. 3, 15C; Colchester and Essex Museum, Colchester; Fig. 76, 8). If continental influence is accepted this vessel should be dated 'equivalent to Ha B (see p. 281), bringing the associated urn (Couchman 1975, fig. 3, 15) into the first millennium. Champion (1975, 136, fig. 3) has compared vessels from Fengate, Northants., to vessels, mostly of Ha B date, from Best (Desittere 1968, 120, fig. 44, 1) and Goirle (*ibid.*, 122-123, figs. 48, 2-3; 51, 4), N. Brabant. Late Bronze Age pottery from the Low Countries is almost exclusively from cemeteries while most British pottery of the later LBA is from settlement sites and Bronze Final III pottery from settlement sites in north-eastern France has yet to be published in detail.

DISCUSSION: LATE BRONZE AGE/EARLY IRON AGE

Earlier Hallstatt

There appears to have been no abrupt transition from Bronze Final III to Hallstatt Ancien in north-eastern France; the same applies to the Urnfield cemeteries on the Marne which continued in use into the Hallstatt period (Chertier 1975, 158-160), though perhaps not for so long as Brisson and Hatt suggested (1953, 201, fig. 40). From a cremation cemetery at La Pieuré, Lacroix-Saint-Ouen, Oise, four burials were recovered in pits with pottery of Late Bronze Age tradition (Blanchet, Jouve and Durvin 1975, 43-45, fig. 39, 5-11). The Ha C sword from Erondelle, Somme (see p. 241) may have accompanied a burial. Re-use of the barrow known as the tombe Fourdaine at Equihen, Pas-de-Calais (Gaucher and Mohen 1974, 73-76), may be dated to the Hallstatt period (Couppé, Gallois and Hurtrelle 1971-75, 198 n. 2). Pottery from the settlement at Néry, Oise, retained Late Bronze Age features and included angular bowls, incised fine-ware and shouldered jars with finger-tip ornament (Audouze, Jorrand, Marquis and Mommelé 1975; Blanchet, Jouve and Durvin 1976, 43, fig. 39, 12-21). Duval and Buschenschutz (1976, 792) claim that the Bronze Final III site at Nanteuil-sur-Aisne, Ardennes (see p. 281), lasted into Ha C and mention contemporary material from Villeneuve-Saint-Georges, Val-de-Marne (Sandars 1957, 279 n. 1), and Fort-Harrouard.

Ha C burials in Belgium and the southern Netherlands may be divided into two groups: the richer barrow burials, usually attributed to Hallstatt warriors, and the poorer, often flat, burials, in the local Late Bronze Age tradition. Most knowledge of the richer burials derives from Mariën's synthesis in his study of the Court-Saint-Etienne cemetery, Brabant (1958), a member of a group of cemeteries in the Dijle valley (*ibid.*, 203-230; de Laet 1974, 395-399). There may have been as many as sixty barrows at this site, but only a dozen are adequately recorded. Cremation, possibly adopted from the local population, was the rule. The large barrows, 15-25 m in

diameter, apparently lacked peripheral structure but the poor quality of the records of old excavations demands caution on this point. Except in barrow 5 at Bruyère-Saint-Job, there was a distinction between burials with swords and burials with razors; horse-gear sometimes accompanied burials with swords.

The group in the south of the province of Namur (Mariën 1958, 232-233; de Laet 1974, 399) was also characterised by cremation under a barrow built over the pyre, but the grave-goods were usually placed in a pit rather than in an urn or other container on the pyre. Horse-gear was absent but the distinction between burials with swords and burials with razors and ornaments prevailed. In the Haine valley (Mariën 1958, 233-234; de Laet 1974, 399-400) the grave-goods were placed next to the pyre; horse-gear was absent but sword and razor burials distinct. Some barrows in southern Flanders may be of Ha C date (Mariën 1958, 234-235; de Laet 1974, 400). A little pottery is preserved from these Belgian Ha C warrior burials (Mariën 1958, figs. 15, 17, 19-20, 24) but not enough to allow the recognition of forms which distinguish these burials from 'native' burials of the Early Iron Age (de Laet 1974, 411).

Isolated rich burials occur in the area occupied by the north-western Urnfield group but only the cemetery at Boshoven, between Budel and Weert, Dutch Limburg, has richer grave-goods than contemporary local cemeteries (Mariën 1958, 235-236; de Laet 1974, 400-405); there had been Ha B burials in this cemetery (Desittere 1968, 132). The isolated rich burials are distinguished by sheet-bronze vessels which usually served as urns (see p. 250-1). The burial at Wijchen (232) probably contained a wagon; like Oss (231) and Meelo (233) it contained horse-gear. Like the rich burials to the south, these lack diagnostic pottery.

Among burials attributed to the indigenous population cremation was the rule, though de Laet (1974, 406) suggests that collective inhumation may still have been practised. Court-Saint-Etienne shows that Late Bronze Age sites continued in use alongside rich Ha C burials (Mariën 1958, 193-195; de Laet 1974, 395, 407) and most Ha B cemeteries in central Belgium continued into Ha C (*ibid.*, 406-407) with flat cremation the usual rite. In the area of the north-western group use of some cemeteries persisted but many new ones appeared (*ibid.*, 407-410). Only one site, Aarschot-Langdorp, Brabant, appears to have consisted exclusively of flat burials (Mertens 1951, 20) and barrows surrounded by ring-ditches, now usually penannular with the opening to the south-east or east (Desittere 1968, 51), though annular ring-ditches persisted (Desittere 1974a, 122; Verwers 1972, 36). At De Roosen, Neerpelt, Belgian Limburg, there are C14 dates for penannular ring-ditches of: 696 ± 230 bc IRPA14, 707 ± 190 bc IRPA16, 386 ± 100 bc IRPA13 and 517 ± 100 bc IRPA2 and for an annular ring-ditch 825 ± 100 bc IRPA17 (van Impe, Beex and Roosens 1973, 23 n. 1). Only six ring-ditches out of 121 were certainly annular and 113 were penannular, the opening to the east or south-east in 90% of cases. Only seven burials lacked some sort of peripheral structure (*ibid.*, 20-21). Two burials were enclosed in long settings of post-holes (Beex and Roosens 1961; Roosens and Beex 1962, 149-151, nos. 104, 111, pls. VI, IX). Cremation was the exclusive rite with only a single burial in each grave, usually in an urn. Accessory vessels were rare and, with a

single exception each urn contained the remains of one person (van Impe, Beex and Roosens 1973, 21-23). Another unusual barrow, perhaps of this period, at the Zevenbergen, Berghem, N. Brabant, barrow 2, was oval with an irregular setting of post-holes, and underlain by an oval ditch which provided a C14 date of 680 ± 65 bc GrN-4959 (Verwers 1966c, 29-31).

Most of the Ha B cemeteries of the Flemish group were still in use during Ha C (de Laet 1974, 410) with little change in burial-rite, though quadrilateral enclosures were probably of early Ha C date at Destelbergen, E. Flanders (de Laet, van Doorselaer, Desittere and Thoen 1976).

The most recent survey of Early Iron Age pottery in the Low Countries is that of Verwers (1972, 123-140) for the southern Netherlands; de Laet (1974, 411-414) recognised the same characteristic forms in northern Belgium, though Desittere (1974a, 126-129) criticises some aspects of Verwer's survey. Verwers' earliest period covers Ha C and the first part of Ha D (1972, 123). There is no abrupt division between late Urnfield and early Hallstatt pottery. The first characteristic form is the Schrägrandurn, with convex profile and everted rim (*ibid.*, 125-127), a local development from the more varied forms of urn current during Ha B, cf. the Laufeld urn of the middle Rhine. These urns may be burnished all over or roughened below the maximum diameter and burnished above or combed and graphite paint was occasionally applied (*ibid.*, 137). Conical-neck vessels of Ha B tradition probably belong to the beginning of Ha C (*ibid.*, 127-128). A more characteristic form is the Eierbecher, a small vessel like an egg-cup (*ibid.*, 128-129) probably derived from the middle Rhine late in Verwers' first period. Handled cups persisted from Ha B into Ha C (*ibid.*, 129). Rough-surfaced coarse-ware on the lower Rhine has often been identified with Harpstedt pottery but Desittere (1967) distinguished local Urnfield Grobkeramik and related roughened pottery occurs in the Early Iron Age (Verwers 1972, 129-133). The characteristic finish is produced by coating the surface of the vessel with an irregular layer of small lumps of clay. It can be applied to everted-rims urns and usually occurs on about half the urns in Early Iron Age cemeteries on the lower Rhine. Vessels resembling true Harpstedt urns (see p. 289), but without fingertipping on the rim, occur at Haps (*ibid.*, Abb. 60). The precise relationship between the two groups is uncertain, but Verwers favours local development from Late Bronze Age coarse wares for the lower Rhine roughened ware (*ibid.*, 132-133). C14 dates for these vessels include 600 ± 180 bc IRPA-1 from Hamont, Belgian Limburg, 565 ± 50 bc GrN-1531 from Eersel, Dutch Limburg (*ibid.*, 133), and 484 ± 125 bc IRPA-15 from De Roosen (van Impe, Beex and Roosens 1973, 23 n. 1). There is a date of 517 ± 100 bc IRPA-2 for an everted-rim urn from the same site (*ibid.*). Another distinctive type of ornament applied to coarse-ware jars consists of bands or panels of pinched-up lines, so-called 'Kalenderberg' (*ibid.*, 138-140), perhaps derived from local Late Bronze Age tradition and current during Verwers' earliest period of the Iron Age (Verwers 1974).

In south-eastern Belgium, in the south-east of the province of Luxembourg, there is a distinctive group of pottery best known from the cemetery at Saint-Vincent (de Laet 1974, 418-420; Mariën 1964), also at Breuvanne (*ibid.*, 163, fig. 110), elsewhere at Haulzy, Marne (*ibid.*, 165-166, fig. 111), and in northern Belgium (Mariën 1966). Most of the pottery at Saint-Vincent is

probably of Ha C date (Mariën 1964, 159, 162). The burials at Saint-Vincent were cremations, urned or unurned, under barrows without peripheral structure (*ibid.*, 131-140).

Detailed chronology of the pottery of the Early Iron Age in the northern Netherlands is uncertain but the earliest characteristic group is probably the roughened coarse ware, analogous to the Harpstedt pottery of north-west Germany summarised for English readers by Hawkes (Hawkes and Clarke 1963, 198-200), with ornament on rim or shoulder. These vessels are usually found as secondary burials in Late Bronze Age ring-ditch barrows (Waterbolk 1962, 29-30, Abb. 21). Everted-rim urns also occur, sometimes with roughened bodies, and urns of more biconical form (*ibid.*, 30-31, Abb. 23-24). A Ha C date is probable for these forms which reflect influence from north-western Germany while both roughened wares and everted-rim urns match contemporary pottery of the lower Rhine area.

Evidence for burials in Iron Age Britain is proverbially sparse, though this sparsity may have been exaggerated, and the occurrence of regular cemeteries is limited in space and time (Cunliffe 1974, 287-295; Harding 1974, 113-126). As for the later part of the Late Bronze Age, radiocarbon dates do not provide specific evidence. A few vessels of Cunliffe's Kimmeridge-Caburn group have been found under barrows with cremation burials (1974, 34, 287; Harding 1974, 115). The Ha C chape from Ebberston, Yorks. (List 235, 7), was found with two Gündlingen swords (Cowen 1967, 444 nos. 195-196), one of which belongs to Schauer's Weichering type (1971, 212 n. 5), "and a quantity of human bones" (Journal of the British Archaeological Association, 17, 1861, 321), in what has often been interpreted as an inhumation burial (Cunliffe 1974, 289; Burgess 1976b, 101). The swords were broken, a factor which has been used to support the burial interpretation (Cowen 1967, 396-398) though the deposition of pairs of swords was an insular LBA3 custom which continued into LBA4. As Cowen remarks (*ibid.*, 422) the Ebberston find, if really a burial, would be notable for its isolation in Britain rather than its presence and cannot be used to buttress significant continental influence; in the Low Countries such swords were buried with cremations not inhumations. Muted claims for Hallstatt influence on the inhumation found with remains of woodwork on Beaulieu Heath, Hants. (Cunliffe 1974, 287-289; Harding 1974, 114), and interpreted as a possible wagon burial, also have little to support them. Harding (*ibid.*) stresses that such wagon burials are atypical on the continent, but even the poorest burials in the Low Countries have a regular, identifiable, rite or structure which is lacking in Britain. The most rewarding avenue of enquiry will surely be the study of human remains from hillforts (Cunliffe 1974, 292; 1976a, 215) which may prove not to represent such an abnormal rite as Harding suggests (1974, 113).

Cunliffe divides the Early Iron Age pottery of southern Britain into various regional groups dated to the sixth century and characterised by angular-profile fine-wares, bipartite bowls and tripartite jars, and coarse-ware shouldered jars (1974, 33-35, figs. 3:2, A:3-5). His chronology, especially when it is founded on the dating of associated bronzes, appears to be somewhat depressed and some forms current in these groups may be included in assemblages associated with LBA3 bronzes.

In his treatment of the pottery of his 'primary Iron Age' Harding also tends to date bronzes too late (1974, 136). Continental influence is cited for the appearance of finger-tipped cordons, specifically from the Hunsrück-Eifel culture, with the confident identification of the single-edged razors from Staple Howe (Lists 225, 1; 266, 1) as "certainly of western German type". Whatever the origin of these razors, it was certainly not the HEK area. Harding appears to imply that it was HEK invaders who, "suppressed the late Urnfield population in Belgium", then crossed to Britain bringing finger-tip ornament in cordons, rims and bodies of coarse-ware vessels (*ibid.*, 136). Unfortunately, there is no evidence for any characteristic pottery brought to the Low Countries by Hallstatt warriors and, according to Verwers (1974, 17), relations between the Low Countries and the HEK were not strong.

As in the Late Bronze Age, comparisons between pottery from Britain and the Low Countries seek to relate pottery from settlements to pottery from burials; more details of continental settlements are needed, cf. the pottery from Néry (see p. 286) where angular bowls and shouldered coarse-wares resemble forms known in Britain.

De Laet (1976, 194) considers that the Ha C warrior burials on the lower Rhine represent the earliest Celtic-speaking population of the Low Countries, a view which accords with the conclusions of Powell (1958, 52), Filip (1962, 28) and Kruta (1976, 58-64) who all regard the Hallstatt period as the culmination of Celtic ethnogenesis. De Laet denies any significant Celtic element in the Urnfield cultures of the Low Countries (1976, 193), nor should the existence of Germanic elements on the lower Rhine be countenanced during the Hallstatt period (Todd 1975, 23 n. 12).

If de Laet's conclusions are transferred to north-eastern France, it will be seen that there is little evidence for Celtic influence beyond the Marne. Current models do not allow a succession of immigrations so explicit as those detailed by Powell (1958, 52-58), though at least one writer appears to regret this (Savory 1976a, 14). Two contrasts between Britain and the Low Countries during Ha C are outstanding; the regular practice of cremation burial and the use of iron swords (see p. 247-8) on the continent and the absence of these traits in Britain. Hawkes (1973, 621-623) envisages a succession of continental influences throughout the Bronze Age represented by the equipment of the socially superior leading to gradual Celtic immigration during the Early Iron Age. However, during Ha C/LBA4 it is precisely the characteristics of the socially superior on the lower Rhine, cremation burial with iron sword, horse-gear and bronze vessel, which are absent from Britain.

Later Hallstatt

There is more material of later Hallstatt date from north-eastern France than earlier Hallstatt and most comes from settlements. Burials appear to be represented only by a late Hallstatt cremation in a pit at Le Blanc-Pavé, Etaples, Pas-de-Calais (Couppé, Gallois and Hurtrelle 1971-75), and a burial of Hallstatt Moyen at Iwuy, Nord (*ibid.*, 198 n. 2). By the late Hallstatt period inhumation was predominant on the Marne (Thenot 1976, 827).

The most important site in north-eastern France is Thiverny, Oise, where a large group of pottery is characterised by painted and combed fine-wares

which can be matched at Mont-Lassois (Durvin 1964; Blanchet, Jouve and Durvin 1976, 45-46, fig. 41) and dated to the Hallstatt/La Tène transition. Perhaps slightly earlier is the site at Bois-d'Ageux, Longeuil-Sainte-Marie, Oise (*ibid.*, fig. 40; Jouve 1976), where painted sherds (*ibid.*, fig. 14, X2, 5170) relate the site to Thiverny and to another site of the Hallstatt/La Tène transition, Famechon, Somme (*ibid.*, 73; Vermeersch 1976, fig. 5, 1). These four sites all have bowls with scalloped rims (coupe or jatte à bords ourlés or en parasol; Lappenschale; lappenschaal) a type known in France principally from Picardy and dated to late Hallstatt and early La Tène (Jouve 1976, 65), not only to La Tène as Leman-Delérie has suggested (1973). This type is also known in southern and western Belgium (Bonenfant 1975, 67-68, fig. 4) but its earliest appearance seems to have been in Ha B cemeteries in the southern Netherlands (Verwers 1972, 140 n.41; 1975, 28, fig. 2, M19; Lanting and van der Waals 1974, 96, fig. 38, 19), if in a somewhat different form from the Early Iron Age vessels. There are additional sites in the Aisne (Blanchet, Jouve and Durvin 1976, 47), including Chassemy which has late Hallstatt elements (Rowlett and Boureux 1969-70, 125). Duval and Buschenschutz (1976, 792) mention late Hallstatt occupation at the Camp du César, Taverny, Val-d'Oise. There is late Hallstatt pottery from occupation sites at Bel-Air, Etaples, Pas-de-Calais (Couppé, Gallois and Hurtrelle 1971-75, 198 n.2), and Tilloy-les-Cambrai, Nord (Demolon and Hurtrelle 1973).

In the lower Rhine area rich burials certainly of Ha D date appear to be rarer than those of the preceding phase; burials 81 and 190 from Haps (230; see p. 260; List 252, 19) compare unfavourably with, e.g. Oss. In many cases, poorer burials cannot be dated specifically to Ha C or Ha D and there appears to have been comparatively little change in the nature of burials, though Verwers has suggested that unurned cremation became more common as the Iron Age developed (1972, 46) and Desittere (1974a, 124) has suggested that some quadrangular ditches may be dated to Ha D.

The second phase of the Iron Age in the southern Netherlands in Verwers' terminology begins late in Ha D (1972, 123) when most of the forms current in the previous phase were still in use. Characteristic of this second phase is pottery comparable with that found in transitional Hallstatt/La Tène and later contexts in the Marne (*ibid.*, 134-136) though the precise chronology of the appearance of this pottery in the Low Countries is uncertain (Desittere 1974a, 129). The northern and southern parts of the cemetery at Lommel-Kattenbosch, Belgian Limburg, appear to be of early La Tène and late Hallstatt date respectively (Verwers 1972, 135; de Laet and Mariën 1950).

The middle Iron Age in the northern Netherlands is represented by the Zeijen culture with its Ruinen-Wommels pottery (Waterbolk 1962, 33-37). Ruinen-Wommels cemeteries have central cremations, urned or unurned in annular or quadrangular ditches, the ring-ditches stratigraphically earlier (*ibid.*, 33; 1965, Beilage 1). Ruinen-Wommels I pottery is characterised by a convex-profile jar with high shoulder and concave neck delineated by an offset and often marked by perforated lugs (Waterbolk 1962, 35, Abb. 26, 5-14; 1965, Abb. 9). An example from Zeijen, Drenthe, is decorated with impressions of a Ha D bronze bracelet (Waterbolk 1961b). Ruinen-Wommels I pottery is dated to Ha D and early La Tène (Waterbolk 1962, 48); there is

considerable overlap with Harpstedt pottery and a pit at De Weper, Friesland, contained pottery of both types and gave a C14 date of 490 ± 50 bc GrN-6410 (Elzinga 1973, 44).

That barrow-burial was still practised in Britain during the Early Iron Age is suggested by dates of 537 ± 90 bc BM-368 and 582 ± 90 bc BM-369 from the ground surface below barrows on Ampleforth Moor, Yorks. (Wainwright and Longworth 1967-70). There is a mid-sixth-century C14 date for the inhumation of two adults accompanied by iron rings at Grime's Graves, Norfolk (Mercer 1976; Burgess 1976b, 101). A regular burial-rite still appears to have been absent from Britain at this time.

When Harding seeks British pottery derived from continental Hallstatt models he begins with the group from Eastbourne, Sussex, with foot-rings and painted ornament (1974, 145-146, fig. 59; Hodson 1962), which he compares with vessels from Les Jogasses, Marne, and dates to the late sixth century. Round-bodied bowls with funnel-shaped or upright necks are also considered to be of Hallstatt origin, derived from Les Jogasses or Saint-Vincent (Harding 1974, 146, fig. 40). The introduction of burnished haematite-coating is ascribed to late Hallstatt immigrants alongside furrowed bowls and a seventh-century date is quoted for the Welby cup to support this (*ibid.*, 148-149), despite the admitted priority of the pottery over the cup (*ibid.*, 149-151), but this argument is negated by the probable LBA3, eighth-century, date of the Welby hoard (158). Incised ornament, as on the inlaid jars from All Cannings Cross, is derived from Fort-Harrouard *Kerbschnitt* pottery (*ibid.*, 153-155; Philippe 1927, pl. XIX), not necessarily of Hallstatt date.

In two recent studies Hawkes (1976a; 1976b) has discussed late Hallstatt pottery in southern Britain. He cites especially pottery from Park Brow, Sussex, jars with high rounded shoulder and tall everted rim and broad bowls with similar features and a slight foot-ring (1976a, 67; Wolseley, Smith and Hawley 1926-27, figs. 5-7; Wolseley and Smith 1924, figs. 4-7), which are distinguished from the Eastbourne pottery but dated only by a general reference to sixth-century Belgium (Hawkes 1976a, 68). The Eastbourne pottery is given a final Hallstatt, Jogassian, date (Hawkes 1976b, 9 n. 20) and a bowl from Long Wittenham, Berks., is given a late Hallstatt date because of the absence of a foot-ring (*ibid.*, 9, fig. 3, f; Harding 1972, pl. 50, A).

These identifications may now be checked against the republication and analysis of Les Jogasses by Hatt and Roualet (1976; 1977). The Eastbourne foot-ring jars cannot be matched precisely among the material characteristic of the latest Hallstatt phases in Champagne (Hatt and Roualet 1977, pls. I-II) and the most similar vessel from Les Jogasses (Hatt and Roualet 1976, pl. 46, 1383) is not very close in form. It is the coarse-ware jars, called 'situlae' by Hodson (1962, 143-145, fig. 2) which can be matched in final Hallstatt and initial La Tène contexts (Hatt and Roualet 1977, pls. II, 26; IV, 16). There is some similarity between the Park Brow bowls (Wolseley and Smith 1924, figs. 5, 10) and Hallstatt bowls from Les Jogasses (Hatt and Roualet 1977, pl. II, 20; 1976, pl. 48, 1141), but the French vessels have deeper foot-rings and angular carinations rather than round shoulders. The carinated bowls (Hatt and Roualet 1977, pl. II, 18, 27) cited by Harding (1964, 146-147) in comparison with British round-bodied bowls are also more

angular than the British vessels and the one French bowl with a rounded profile (Hatt and Roualet 1976, pl. 7, 828) appears to have had a foot-ring. Specific Belgian parallels for the Park Brow vessels appear to be lacking at Saint-Vincent (Mariën 1964) and at the southern cemetery, Lommel-Kattenbosch (de Laet and Mariën 1950, 313-330). Without the implicit assumption of Hallstatt immigration or influence it becomes more difficult to find convincing continental parallels for British Early Iron Age pottery.

SETTLEMENTS

Introduction

The study of settlements in different areas has been strongly influenced by local traditions of fieldwork and excavation and, to some extent, by local topography. In southern Britain tradition has produced concentrated study of the chalk downlands, especially in Wessex and west Sussex, while the archaeological potential of the lowland gravel areas has only more recently been exploited on a large scale. One especially impressive class of monument, the hillfort, has long been attractive to fieldworkers and excavators and its significance may have been over-estimated. Few settlements in north-eastern France have been excavated or published adequately, though geology and topography are identical with certain parts of southern England and aerial photography has revealed many sites. Recent work in the valleys of the Oise and Aisne has begun to reveal settlements of various periods, notably the early Neolithic. Evidence from Belgium is even more sparse and large-scale excavation of cemeteries has not been matched by exploration of settlements. In the Netherlands a tradition of large-scale excavation, exemplified by A. E. van Giffen and continued by the ROB, assisted by the good preservation of features in sandy sub-soil, has produced detailed evidence of structures and complete plans of settlements.

The chronological divisions derived from metalwork are not readily applicable to settlements which will be discussed here without any such divisions but under the headings of two topics which have been prominent in discussion of relations between Britain and the continent: house-types and hillforts.

House-types

The contrast between house-types in Britain and on the continent during the Bronze and Iron Ages has in the past been a subject for somewhat sterile controversy based on the prevalence of round houses in Britain and of rectangular houses on the continent.

Round houses are known on many British sites of the Early and Middle Bronze Age and appear to have been the dominant type on settlements with Deverel-Rimbury pottery: Rams Hill, Berks., Shearplace Hill, Dorset, Codicote Heath and Ware, Herts., Hunstanton, Norfolk, Itford Hill, Amberley Mount, Cock Hill and Plumpton Plain A, Sussex (Bradley and Ellison 1975, 163). Re-examination of South Lodge Camp, Berwick St. John, Wilts., has produced evidence of round houses (R. Bradley). A good additional example is from Fengate, Northants. (Pryor 1977, 14, fig. 7), and another from Abingdon, Berks. (R. Bradley; R. Henderson); two less well-defined round

huts were found at Chalton, Hants. (Cunliffe 1971, 3-6, figs. 2-3). In Cornwall there are examples at Gwithian (Megaw 1976) and Trevisker (ApSimon and Greenfield 1972, 307-312, fig. 4), while many round structures are known on Dartmoor and Bodmin Moor (Fox 1973, 100-112). Rectangular structures, usually small of four or six posts, are known from the late Neolithic, in a Beaker context at Sutton Hoo, Suffolk, during the Early Bronze Age at Hunsanton and the Middle Bronze Age at Rams Hill, Cock Hill and Thorny Down, Wilts. (Bradley and Ellison 1976, 164-165), with an example of two phases at Poundbury, Dorchester, Dorset (Green 1971, 155, fig. 16).

Various Late Bronze Age and Early Iron Age sites have preserved groups of structures. Round houses, post-ring or stake-built, occur on several hillforts in the Welsh Marches (Guilbert 1977, 41-42, figs. 2-3) and the later stake-built structures which survive below the rampart silt at Danebury, Hants., show how easily shallow but important features could be destroyed in unprotected contexts (Cunliffe 1976a, 202-205, figs. 4-9). There are round houses on Late Bronze Age sites at Aldermaston and Beedon Manor Farm, Berks. (R. Bradley), Runnymede Bridge (Longley 1976, 10, fig. 3) and Petter's Sports Field (M. O'Connell), Egham, and Weston Wood, Albury (Harding 1964, 12-13, fig. 2), Surrey, and perhaps at Mill Hill, Deal, Kent (T. Champion). Classic sites of this period with round houses are West Harling, Norfolk (Clark and Fell 1953), and Staple Howe, Yorks. (Brewster 1963); more recently, Eldon's Seat, Encombe, Dorset (Cunliffe and Phillipson 1968).

The other structure characteristic of the Late Bronze Age and Early Iron Age in Britain is the four-post setting (Cunliffe 1976b, 346-347). An example from Moel y Gaer, Flints., has given a C14 date of 1015 ± 45 bc SRR 498 (Bradley and Ellison 1976, 165) and four-posters are common on hillforts in the Welsh Marches (Guilbert 1977, 41); they are early features at Danebury (Cunliffe 1976a, 208-209, fig. 2, c). Radiocarbon dates indicate early use of four-posters at Grimthorpe, Yorks. (Stead 1968, 155, 190; Bradley and Ellison 1976, 155-156, 165). They may be apparently isolated from other structures, as at Danebury, or integrated with round houses (Guilbert 1975, 205, fig. 1).

More massive rectangular settings, sometimes laid out in regular patterns, appear to belong to the later Iron Age (*ibid.*, 207, fig. 2; Cunliffe 1976a, 202, 209-210), though there is a massive structure at Staple Howe (Brewster 1963, 47-55) and rectangular features occur at West Harling (Clark and Fell 1953, 13). A series of rectangular floors may be present at All Cannings Cross, Wilts. (Harding 1973, 56, fig. 9).

A most important site is Crickley Hill, Gloucs., a hillfort with groups of buildings immediately inside the entrance; these groups showed similar layouts in consecutive phases. In period 2 six boat-shaped structures were aligned along a hollow way leading to the entrance. The largest structure, 24.4 m long, had small wall-posts outside two rows of massive aisle-posts with three ridge-posts; of other structures only the presumed aisle-posts remained. Four four-posters are assigned to this period. During period 3 a large round house was surrounded by subsidiary round houses and four-posters (Dixon 1973, 6-10, fig. 17). Diagnostic finds were scarce but calibrated radiocarbon dates suggest that the date of both these periods fell between the

eighth and fifth centuries B. C. (*ibid.*, 11-12). These two periods appear to represent the same pattern of one large house with subsidiary houses and four-posters rebuilt using different house types, at the same time as the rampart was rebuilt, also with a changed technique. The change in house type need be no more significant than the change in rampart construction or entrance plan, of only local significance without any implication of drastic cultural change.

The only relevant house-plans in north-eastern France are both rectangular: early Hallstatt at Néry, Oise, and earliest La Tène at Chassemy, Aisne (Audouze, Jourrand, Marquis and Mommelé 1975; Rowlet and Boureux 1969-70). Rectangular structures predominate on the Late Bronze Age site at Dampierre-sur-le-Doubs, Doubs, though a few are circular (Pétrequin, Urlacher and Vuallat 1969), and on the Late Bronze Age hillfort on the Hohlandsberg, Haut-Rhin (Bonnet 1973, 458, fig. 3).

Several Early Iron Age settlements are known in Belgium (de Laet 1974, 414-416) but only one has produced house-plans. Remains of two structures were recovered on the Hoeve Heide, Lommel, Limburg (de Laet 1961a, 137-153), but neither appears complete enough to allow confident reconstruction; this site is dated to the Hallstatt/La Tène transition (de Laet 1974, 415). De Laet suggests that these structures may have been rectangular (*ibid.*) like most later Iron Age structures in the southern Low Countries (*ibid.*, 495) save the well-preserved round house with a porch at Grote-Spouwen, Belgian Limburg (Lux and Roosens 1972, 9-12, pl. II), perhaps of La Tène date (de Laet 1974, 495).

The settlements of the North Sea coast from the Rhine to northern Jutland have recently been discussed in an excellent synthesis by Müller-Wille (1977). During the Middle and Late Bronze Age the principal house type was the long house, here understood to include a byre, of three or four aisles (*ibid.*, 155 n.5 with n.1, Abb. 2, 1-4, 10, 13-14; 3, 1-6; 4). Sites of this period are concentrated in the north-eastern Netherlands and northern Jutland with only Norddorf, on Amrum, in between. Smaller rectangular structures are usually present on Dutch sites (*ibid.*, Abb. 2, 5-9, 11-12, 15-17) but in Denmark are known only at Spjald (*ibid.*, Abb. 3, 7-9). The Dutch sites are generally earlier than the Danish, Early or Middle Bronze Age Hilversum or Drakenstein phases, as opposed to MV/MVI (*ibid.*, 155-157). Round structures occur on contemporary Dutch sites (*ibid.*, 157 n.6, Abb. 2, 18-21). All three types of structure are present at Nijnsel, N. Brabant (Beex and Hulst 1968, fig. 4). No Bronze Age round house appears to have been found north of the Rhine (Müller-Wille 1977, Abb. 4). Early Iron Age sites are more plentiful along the North Sea coast, but examples are still sparse between the Ems and central Jutland (*ibid.*, 157 n.7 with n.1, Abb. 6). Three-aisled long houses are the rule in the coastal area (*ibid.*, Abb. 1; 5) and this structure becomes more common over a wider area during the later Iron Age (*ibid.*, 163-165, Abb. 7). On the lower Rhine the two-aisled house is more common at this time (*ibid.*, 165-166 n.14, Abb. 8-9). Pre-La Tène examples are known from the site of the Roman *colonia* at Xanten (Hinz 1974, 368, Bild 10), but most Dutch finds appear to be of La Tène date (Verwers 1972, 86-88). Müller-Wille (1977, 166 n.15) relates this lower Rhine group to late Hallstatt and

early La Tène structures in south-western Germany at the Goldberg (Zippelius 1953, 18, Abb. 2) and the Heuneburg (Kimmig and Gersbach 1971, Beilage 2-6), though three-aisled structures also occur at the Goldberg (Zippelius 1953, 21, Abb. 3) and some buildings at the Heuneburg have foundations which might have supported a three-aisled structure (Kimmig and Gersbach 1971, Beilage 1), as Müller-Wille points out (1977, 166 n.16). There is a well-preserved three-aisled long house among the rectangular structures on the Aleburg, Befort, Luxemburg (Schindler 1969; Riek 1942), which owed its excavation to, among others, Reichsführer-SS Heinrich Himmler. This site dates to HEKI/II, the Hallstatt /La Tène transition (Haffner 1976, 410, Liste 3 no. 2). One- and two-aisled structures are common on south German and middle Danube Urnfield settlements (Hermann 1975; Říhovský 1969) though three-aisled long houses are also known (*ibid.*, 242-244, Abb. 21-23a). Ancillary structures, usually of four or six posts, occur on some Dutch and German sites of the Early Iron Age (Müller-Wille 1977, 166 n.18, Abb.10), but they are absent from Danish sites of this period and continental examples are much rarer than British.

Some Bronze Age sites represent single forms of two or three main buildings with ancillary post settings. Elp is the best known of these (*ibid.*, 173, Abb. 12), extending over several phases; Nijnsel appears to have had only a single phase. Larger settlements are known, e.g. Angelsloo-Emmerhout and Spjald, with regular lay-out (*ibid.*, 177-178, Abb. 14-15). Such large regular settlements become the rule in the Iron Age, with Grøntoft probably the best example (*ibid.*, 179-187, Abb. 16-18); other Early Iron Age sequences are known at Jemgum and Hatsum in Lower Saxony (*ibid.*, 187-192, Abb. 22-23) and they developed into more sophisticated settlements, round a terp at Ezinge (*ibid.*, 192-193, Abb. 24), or, during the Roman Iron Age, at Feddersen Wierde and Wijster (*ibid.*, 194-202, Abb. 25-30). The earlier settlements with one- or two-aisled long houses and ancillary post-settings are interpreted as simple forms of mixed economy. The smaller sites of the Early Iron Age have three to five long houses and larger sites more than five. During the later Iron Age more houses lack byres and the more sophisticated sites show signs of a greater variety of activities and more organisation (*ibid.*, 213-217).

There is a genuine contrast between southern British house types of the Bronze Age and Early Iron Age, predominantly round, and the aisled long houses of the lower Rhine area and northern Europe. This is somewhat blurred by the presence of round houses on sites in the southern Netherlands and of ancillary structures, especially four-posters, in the Netherlands and northern Germany. The evidence from Belgium and northern France is not sufficient for generalisation. Rectangular houses may be expected in Urnfield culture areas by analogy with central Europe, but round houses are also present. It does not, however, seem that north-eastern France shared the British pattern.

What of function? The northern aisled long houses were clearly for stalling cattle (Waterbolk 1975). There is no positive evidence for this arrangement in any British structure (*ibid.*, 393), not even at Crickley (P. W. Dixon). The same contrast has been observed for the Anglo-Saxon period; migration period houses on the continent had changed little since the Bronze Age, yet byres are absent in Britain. Climatic factors are usually invoked (Rahtz

1976, 60-61; Bradley 1977-78, 272), citing recent work which has shown that dairy cattle are often wintered in the open in central southern England and in yards in eastern England (Grundy 1970). The presence of a byre at Trevisker has been suggested but the relevant structure was poorly preserved (ApSimon and Greenfield 1972, 310, 353-354, fig. 10). Four-post structures are conventionally interpreted as granaries (Cunliffe 1976a, 202; Müller-Wille 1977, 166). Other explanations may be proposed (Ellison and Drewett 1972, 185-189, 190-193): watch-towers, shrines or platforms for exposure of the dead, but none of these seems plausible as a regular explanation. Watch-towers would often have been unnecessary; the only relevant 'shrine', Bargerosterveld (Waterbolk and van Zeist 1961), is not inside a settlement; exposure platforms would probably have been redundant on continental sites where a regular cremation rite was practised.

Comparison may be more relevant than contrast. The north European sequence outlined by Müller-Wille shows small Bronze Age settlements becoming larger and more organised during the Iron Age. There is no clear evidence of such a sequence for undefended sites in Britain; there were nucleated settlements, such as Itford Hill, Sussex, at the end of the second millennium (Cunliffe 1974, 14, fig. 2:3) and single farms were still present late in the Iron Age (*ibid.*, 155-158). Cunliffe has outlined a possible sequence of development of central-place hillforts, populated permanently, from plateau enclosures, populated impermanently (1976b, 343-351; 356-357; 1978, 17-19, 271-273, 329-331), and the appearance of planned hillforts (Guilbert 1975) during the first millennium may represent increasing organization of settlements during this period (Bradley 1978, 25-27, 116-117). This is surely more important than using house types to confirm or deny invasion (Harding 1973, 58) and we still have all too few plans from the closest part of the continent, north-eastern France.

Hillforts

The hillfort, the most impressive field monument in many areas of Britain, has often been regarded as a symbol of immigration, either at the inception of the Iron Age (Hawkes 1931) or, more recently, during the later Bronze Age (Savory 1976b, 243-250; Mackie 1976, 224, 231). However, the development of British hillforts can be traced within a purely insular context (Bradley and Ellison 1976, 167-170; Cunliffe 1978, 331) with the earliest sites having late Neolithic and Early Bronze Age antecedents. These early sites, e.g. Norton Fitzwarren, Somerset, Rams Hill, Berks., Highdown, Sussex, and Martin Down, Dorset, may have more in common with earlier henges than with later hillforts and they appear to lie near the centres of concentrations of Middle Bronze Age metalwork, as Mount Pleasant, Dorset, lies in the area of a concentration of Arretton metalwork (Bradley 1978, 115, 119-21). The subsequent development of hillforts may have been related to a change of emphasis in the organisation of the landscape from ritual during the late Neolithic and Early Bronze Age to subsistence during the later Bronze Age and Iron Age (*ibid.*). Like their diverse origins, the several functions of hillforts have yet to be worked out completely, but between the small Middle Bronze Age enclosures, like Rams Hill, and the huge defensive earthworks of the first century A.D., like Maiden Castle, there must have been

considerable change. The overall distribution of Late Bronze Age metalwork in southern Britain (cf. Burgess 1968a, figs. 6-8, 10, 12, 14, 16, 19; 1967-70, fig. 2) shows major concentrations in lowland areas, especially the lower Thames valley and East Anglia, and scarce finds in the upland regions with many hillforts; a similar contrast may be observed between the sophisticated lowland oppida of the first centuries B. C. and A. D. and contemporary hillforts (Cunliffe 1976b, 353-356, figs. 10-11).

Continental evidence for hillforts is patchy. Few sites in France or Belgium have been excavated under modern conditions, while in Germany enormous efforts have been concentrated into a handful of individual sites, notably the Heuneburg and Manching. The best summary of the central European evidence is by Jockenhövel (1974d). A few sites were fortified during the Tumulus period (*ibid.*, 49), e.g. the Heuneburg (Gersbach 1973) where three phases of timber-framed rampart lasted to Ha A1 (Kimmig 1976, 192-196). Defended sites of this date may have been related to the appearance of defended sites in the Reinecke A/B Otomani and Mad'arovce cultures of Slovakia (Vladár 1973, 273-293) under mediterranean influence (*ibid.*, 292-293) and may have provided a technological basis for Urnfield developments (Jockenhövel 1974d, 51). The chronology of the south German sites (*ibid.*, 53-54) shows that continuity of occupation throughout the Urnfield period can rarely be proved but that most sites were occupied at the end of the Urnfield period. There is little evidence from Ha B or Ha C on the Heuneburg (Kimmig 1976, 196). In Hesse defended sites began only at the end of the Urnfield period (Jockenhövel 1974d, 56). In the Lausitz area hillforts became common during MIV/Ha B but more sites appeared at the end of the Urnfield period and most were occupied during the Hallstatt period (*ibid.*, 48; Niesiołowska-Wedzka 1974, 174-196). Only three Swiss sites of Urnfield date are cited by Jockenhövel (1974d, 48). There is no current synthesis of Hallstatt fortified sites in central Europe but rich, sophisticated hillforts, exemplified by the Heuneburg and Mont Lassois, show a stratified society with a number of very powerful centres exhibiting influence from the classical world (Kimmig 1975, 39-41).

The evidence from France is sparse. Sandars lists some hillforts on which Late Bronze Age pottery has been found (1957, 369, List XXVIII). There is material of Bronze Final I and II from the defended site at Hohlandsberg, Haut-Rhin (Bonnet 1973). Several sites in the Oise were probably fortified at the end of the Late Bronze Age, e.g. Saint-Pierre-en-Chastre, Catenoy and Bailleul-sur-Thérain (Blanchet 1976a, 39-40), also sites in Normandy (Verron 1976a, 596) where the rampart at Mont-Joly, Le Brèche au Diable, Soumont-Saint-Quentin, Calvados, was dated by a fragmentary belt ornament of Audouze's sub-type 3a, Bronze Final I/II (Edeine 1966, 260, figs. 10-11; Audouze 1974, 238, cf. 256 no. 24, fig. 4, 3), and radiocarbon dates from the Camp de Bierre, Merri, Orne, suggest possible Late Bronze Age fortification (Verron 1973, 389). There is Middle Bronze Age material from Catenoy and Fort-Harrouard (Gaucher 1976, 577). There are Late Bronze Age clay moulds from Fort-Harrouard and Catenoy (Mohen 1973) and the quantities of metalwork from Fort-Harrouard (Phillipe 1927; 1936) and Saint-Pierre-en-Chastre (171) are much larger than those from any British hillfort. Evidence for Bronze Age bronze-working on any scale in a British hillfort is rare.

As yet there is no conclusive evidence for Hallstatt occupation on any hillfort in Picardy (Jorrand 1976, 61) though a few sites of this period are known from the Paris Basin; evidence from Normandy and Brittany is equally sparse (Verron 1976b; Giot 1976, 782), though several potentially relevant sites are included in the survey of Wheeler and Richardson (1957) which was more concerned with the later Iron Age.

No Belgian hillfort can be dated before the late Hallstatt period but the earliest occupation on four sites can be dated to a pre-La Tène phase: Montauban, Buzenol, Luxembourg; Hastedon, Saint-Servais, Namur; the Kesselberg, Kessel-Lo, Brabant; the Kemmelberg, W, Flanders (de Laet 1971; 1974, 422-433). Excavation has revealed few details of these sites; there is a small sherd of Attic black figure pottery from the Kemmelberg (van Doorselaer 1970).

Where a sequence can be established on the continent it appears that hillforts gradually became more numerous during the later Bronze Age but only at the very end of the Late Bronze Age and during the Early Iron Age were they most numerous. This matches the sequence in Britain where hillforts rose in numbers during the early part of the first millennium B. C. to reach a peak during its middle centuries and thereafter declined in numbers but not in importance (Cunliffe 1976b, 346-347; 1978, 331-332). The central European evidence, as presented by Jockenhövel, will not support an impulse of hillfort-building towards the north-west and no sequence in northern France or Belgium can yet be elaborated to provide an origin for hillforts on the other side of the Channel. Continental Late Bronze Age hillforts have produced more metalwork, especially hoards, and more evidence for metalworking than British hillforts (Jockenhövel 1974d, 52).

The development of field systems may reflect some of the factors relevant to the development of hillforts. Organised field systems probably appeared when agricultural pressure on the landscape was increasing; environmental changes were probably significant but social changes may have been necessary to implement the new organisation of agriculture. Field systems seem to have developed at different times in different regions; during the Middle Bronze Age in Britain and on the upper Rhine, but not until the beginning of the Early Iron Age in the Netherlands (Bradley 1977-78).

THE ORGANIZATION OF METALWORKING

Bronze

The study of prehistoric bronzeworking is a complex topic. Some aspects, such as mining, have left little trace, and others, such as metal composition, have not yet had their full potential realised. In the following section some aspects of bronzeworking during the later Bronze Age will be examined with particular reference to Britain and northern France. The Stuttgart Studien zu den Anfängen der Metallurgie, concerned mainly with the Copper Age and earlier Bronze Age, are of little relevance here; nor have I considered their controversial work on gold.

The production of bronze objects may be placed under four main headings: mining, smelting, casting and smithing. Mining can only have taken place

where ore was available, in veins or placer deposits whose location would be governed by geology. Once extracted and separated the ores would have been smelted, then melted and the various metals mixed in the desired proportions and the objects would then have been cast. Post-casting work, smithing, would have included hardening, sharpening edges and the application of certain types of ornament.

Copper ore is widespread in the highland zone of Britain and in Ireland (Tylecote 1962, fig. 2, table 6; Harbison 1966, fig. 1; Briggs 1976, 273-278). The distribution of French copper ore is mainly southerly and easterly; the deposits in Brittany are poor and were probably not exploited in prehistoric times (Briard 1965, 20-21; 1976b, 238). Both Britain and northern France have rich deposits of tin in Cornwall (Tylecote 1962, 63) and Brittany (Briard 1965, 15-20; 1976b, 238) respectively. Resources for bronzeworking appear to be absent from the Low Countries (de Laet 1974, 283).

Our knowledge of prehistoric copper-mining is derived mainly from the work of several generations of Austrian scholars in the Salzburg and Tyrol regions (Pittioni 1951; Clark 1952, 191-193). From surface exploitation of a vein developed a complex sequence of shafts which facilitated ventilation and drainage. The ore was removed from the face by fire-setting, a process which would have consumed much wood, and wood would also have been required for lining the galleries. The ore was dressed, crushed and ground at a separating-place in the immediate vicinity of the shaft. Smelting took place some distance away because of the need for additional quantities of wood not available by the mine. These operations must have employed several hundreds of workers and do not appear to have been practical on a small or part-time scale. At least in the mines, full-time work is envisaged. Overall organisation by a central authority is inferred, from the identification of a vein to the production of an ingot.

No such extensive workings have been identified in Britain. There is evidence of primitive exploitation at sites such as Alderley Edge, Cheshire (Clark 1952, 69; Tylecote 1962, 20), where both mining and smelting took place, but such sites are difficult to date and ancient remains could easily have been erased by modern workings (*ibid.*, 19). More secure evidence comes from Ireland at Mount Gabriel, Co. Cork (Jackson 1968; Deady and Doran 1972; Herity and Eogan 1977, 115), where about twenty-five adits have been observed but only two explored; both extended for about six metres with evidence of fire-setting. Many stone mauls of the kind conventionally associated with primitive mining were found. Tip-heaps at the entrances to the adits presumably represented separating-places; no traces of smelting have been found but no extensive search has been made. The mines were covered by peat growth, probably prehistoric, and a sample from a tip-heap gave a C14 date of 1500 ± 120 bc VRI-66 (Felber 1970, 316). The exploitation of Mount Gabriel seems to have been on a smaller scale than exploitation in Austria.

Prehistoric exploitation of tin in Cornwall and Brittany is usually presumed, but no such workings have yet been identified or dated with certainty (Hencken 1932, 158-188; Briard 1965, 15-20). In answer to the question, "where is the tin?", Charles (1975, 22-23) has suggested that it was passed

to the founder, not in ingot form but still as ore, probably cassiterite. Cassiterite pebbles occur on Bronze Age hut sites at Trevisker, Cornwall, with possible remains of bronze-casting (ApSimon and Greenfield 1972, 350, 355), and on Dean Moor, Devon, with a possible fragment of tin slag (Fox 1957, 47, 50, 73), but objects of smelted tin are known from the Irish Late Bronze Age (Tylecote 1962, 41, 67) and the hoards from Grays Thurrock (148) and Auchtertyre (159) both contain pieces of smelted tin. The well-known Early Bronze Age bracelet from Exloo, Drenthe, bears beads of tin, faience and amber (Butler 1969, 55, foto 2).

More smelted copper has been preserved; in Britain and northern France this is usually in the form of plano-convex or bun-shaped ingots from a furnace (Tylecote 1962, 27). When these ingots have been analysed their content has been found to be almost pure copper (*ibid.*, 31, fig. 4, table 8; 1976, 30; Charles 1975, 22; Giot, Bourhis and Briard 1966, 26-43; Northover 1977, 67). Copper cake occurs in several Irish Early Bronze Age hoards and the hoard from Knockasarnet, Co. Kerry, contained a complete ingot (Harbison 1966a). Plano-convex ingots occur in LBA3 hoards in south-eastern England and on settlements sites at Weston Wood, Albury, Surrey (Harding 1964, 15; Tylecote 1967, 111), where hearths and pits may represent remains of metal-working, Queen Mary's Hospital, Carshalton, Surrey (Lowther 1939, 180), and the ditched enclosure at Mucking, Essex (Jones 1975, 141).

Traces of bronzeworking associated with structures on well-excavated sites are scarce. Two good examples come from Ireland. Knockadoon, a peninsula in Lough Gur, Co. Limerick, is perhaps better known for its Neolithic houses, but the houses on sites D and F were associated with fragmentary moulds of stone and clay and crucibles (Ó Ríordáin 1954, 384-385; 400-403, fig. 40, pl. XLI, 415-419, 420-422, fig. 46, pl. L, 449). The implements represented in the moulds were Middle Bronze Age types and the site suggests sedentary rather than itinerant workers (Herity and Eogan 1977, 170, figs. 66-67). Late Bronze Age metal-working remains are known from several Irish sites (*ibid.*, 187-193) but only at Rathgall, Co. Wicklow, are these remains, fragments of clay moulds, associated with structures, a large round house in a circular enclosure. Working went on over a long period of time on a large scale (Raftery 1976b, 345-346).

There is slight evidence of metalworking of possible Middle Bronze Age date at Fengate, Northants. (Pryor 1977, 14) and a fragment of a clay mould from South Lodge Camp, Wilts (R. Bradley). The evidence from Trevisker and Dean Moor (see p. 294) should be Middle Bronze Age and the contemporary bronzes from Tredarvah, Cornwall, may have come from a workshop area (Rowlands 1976, 8, 276 no. 167). Mould fragments probably of early Late Bronze date come from Gwithian (Megaw 1976, 51) and a site at Dainton, Devon, has produced clay mould fragments of Middle or Late Bronze Age date. There is a stone mould for a socketed axe from an enclosure on Burderop Down, Wilts. (List 128, 15). Casting debris comes from the LBA3 site at Runnymede Bridge, Edgham, Surrey (Longley 1976, 13), while the adjacent Petter's Sports Field site has produced a fragment of a mould for socketed axes and a LBA3 hoard (List 128, 12; M. O'Connell). The ring-ditch enclosure at Mill Hill, Deal, Kent, has produced bronze rings and fragments of clay

moulds for such rings, while there is a pin mould from a site at Highstead, near Canterbury, Kent (T. Champion). Good evidence comes from Jarlshof, on Shetland, where copper deposits occur (Tylecote 1962, table 6); fragments of crucibles and clay moulds show that casting was practised in the Late Bronze Age settlement of courtyard houses (Hamilton 1956, 4, 24, 29, fig. 14). Convincing evidence of bronzeworking on British hillforts during the Late Bronze Age is rare. Ham Hill, Somerset, has produced mould fragments (Hodges 1960, 160, pl. III, c); the best evidence is provided by the clay moulds and casting debris at Traprain Law, E. Lothian (Burley 1955-56, 127, 153-154). Evidence for the manufacture of palstaves on Old Oswestry, Salop., relates to a pre-rampart palisaded enclosure (Varley 1964, 72).

Irish finds of moulds and crucibles, where not associated with well-defined structures, are often from crannogs or other water-side sites (Herity and Eogan 1977, 187-193). It is possible that these were prestige sites (Bradley 1978, 84, 112). Irish 'cooking-places' have produced rich metalwork, including perhaps a penannular gilded ring and a gold dress-fastener (O'Kelly 1954, 131, 142-143) and there is a fragment of a clay mould for spearheads from a related site at Leckhampton, Gloucs. (Bradley 1978, 83-4; excavation by C. J. Young); in the northern Isles these sites (burnt mounds) are regarded as regular later Bronze Age settlements with little evidence for metalworking (Hedges 1974-75, 70, 81-82).

More evidence for bronzeworking comes from hillforts in north-eastern France where moulds of clay and stone, crucibles and a tuyere were originally identified (Philippe 1927, 44-46, pl. X) at Fort-Harrouard, but little of this material has been analysed recently (Mohen 1973, figs. 2, 3A, 5, 6) and the same applies to the material from Catenoy (*ibid.*, fig. 1) and Saint-Pierre-en-Chastre (171; Blanchet 1976a, 38).

A brief digression into the later Iron Age may prove instructive. Excavation of the enclosed settlement at Gussage All Saints, Britford, Dorset (Wainwright and Spratling 1973), revealed, alongside the sparser evidence of metalworking usual on such sites, a large quantity of workshop debris which was nearly all found in a single pit. This fortuitous find emphasises how fragile are the remains of prehistoric bronzeworking, especially clay moulds, and how little can usually be recovered by excavation. The Gussage find indicates production of a scale and complexity which militates against small, impermanent workshops and suggests regular production on a single site (Spratling forthcoming) which was not a hillfort.

Further evidence may be derived from the distribution of metalwork. Regional groups have been recognised in the Irish Late Bronze Age (Eogan 1974a) and Early Bronze Age axe-shaped 'ingots' and unfinished axes show a marked concentration in Co. Antrim, an area devoid of copper resources (Harbison 1966, 5-6, fig. 3). The evidence of distribution is more explicit in Britain where ore resources are confined to the highland zone. While it is impossible to quantify exactly the contrast between the highland and lowland zones, some observations may be made. From the end of the Early Bronze Age the distribution of certain types is concentrated in south-eastern England, especially in the lower Thames valley and the Cambridge area (Burgess and Cowen 1972, figs. 6, 2; 7). These concentrations continued through the

Middle (Rowlands 1976, map 27) and Late Bronze Age (Burgess 1966a, figs. 6-8, 10, 12, 14, 16, 19), especially marked for the Late Bronze Age sword types which were used throughout Britain, as they had been for rapiers (Trump 1962, 95-101). The concentration of Late Bronze Age finds in the lower Thames valley is still significant when river and river-bank finds are discounted (S. Needham). The largest British hoards are found in south-eastern England; on the south coast during the Middle Bronze Age and at Isleham during the Late Bronze Age.

The occurrence of copper ingots in south-eastern hoards shows that copper, presumably smelted near its source, was used by founders in the south-east and that fresh supplies were required during LBA3 despite any re-use of metal from earlier objects (Northover 1977, 67). The contrast between the south-east, devoid of resources but rich in bronze objects, and the highland zone, rich in resources but comparatively poor in objects, is emphasised by the example of Cornwall which is poor in objects compared with other parts of southern England but has local resources of both copper and tin.

This evidence indicates that metal in a smelted state was transported from the highland zone of Britain to the lowland zone; both copper and tin were available in highland Britain so the possible use of Irish or French sources after the establishment of metallurgy in lowland Britain should be regarded with caution, especially as Armorican copper sources were probably not exploited during the Bronze Age. The well-defined regional distributions of axe types in Britain and on the continent appears to contradict any suggestion that axes were manufactures only in restricted areas close to the metal sources and thence exported to other areas. A concomitant observation is that the distributions of axe types are often confined to small areas while the distributions of weapon types cover much larger areas (Rowlands 1976, 121-122, 167-168; Northover 1977, 64), cf. palstaves against rapiers and spear-heads during the Middle Bronze Age; socketed axes against Ewart Park swords during LBA3; the regional variations of ornament on Sompting axes of LBA4 (Burgess 1967-70, 271) against the distribution of Hallstatt bronze swords with all sub-divisions widespread (Burgess 1968a, fig. 19).

General comments on the organisation of bronzeworking have often incorporated Childe's concept of the itinerant smith. This was based on the assumption that the complex knowledge and skills necessary for bronzeworking would remove its practitioners from the usual classes of society into a de-tribalized hereditary class (1930, 4-5, 10; 1940, 162) and that the need to acquire raw materials from outside communal boundaries produced a revolutionary change in social organisation (1930, 9). Childe summarised these views just before his death (1957). Clark recognised the distinction between producers and fabricators and, while allowing itinerant smiths, suggested that large-scale production indicated permanent workshops (1952, 197-199). Harbison suggests that small Early Bronze Age hoards represent itinerant smiths (1966, 9) but this reasoning would militate against smiths later, when hoards became larger. Rowlands (1971b) has examined relevant ethnographic evidence. He finds little indication of itinerant smiths or of trade in scrap; full-time founders are not essential but, when they occur, are usually supported by privileged minorities. These may produce weapons for there is evidence of distinction between many tool smiths and few weapon smiths.

Thrane has pointed out that there is no need for itinerant smiths after the initial spread of metal-working; the transfer of ideas and of objects to be imitated would have been sufficient (1975, 193). The distribution of regional axe types in Britain argues against the presence of smiths itinerant over large areas and indicates the existence of local centres of production (Rowlands 1976, 163). Concentrations of Late Bronze Age material around the London region suggest local workshops and hoards may represent the movement of smiths around restricted market areas in such regions of dense settlement (S. Needham).

Rowlands compares the high tin content of British MBA2 palstaves in south coast hoards to the high tin content of contemporary palstaves from northern France (1976, 5, 177-178, fig. 26). The tin content of these British palstaves, c. 17%, is indeed similar to that of Breton, Norman and Somme valley palstaves (Giot, Bourhis and Briard 1966, 19; 1970, 17-21; 33; Verron 1975c, 47; Blin-Stoyle 1959, 201-202 nos. 57-59, 63-69), but it should be noted that bronzes in Arretton hoards have an average tin content of c. 14% (Britton 1961, 41, fig. 1; 1963, 294). Northover (1977, 66) has suggested that the high nickel content of MBA2 palstaves in southern England is related to the import of bronze from north-western France, but a high nickel content was also noted for Arretton bronzes (*ibid.*, 65). Table 14 shows that palstaves from southern England have an average nickel content higher than that of palstaves from Brittany but lower than that of palstaves from the Somme valley. It appears that more comprehensive programmes of analyses, like that carried out on the Welsh material, with the results related to accurate typological identification, are needed before detailed conclusions can be made on the basis of metal content.

The lack of ingots in MBA2 palstave hoards in southern England leads Rowlands to suggest that raw metal was not a specialist trade item at this time (1976, 166). Though the Marshall Estate hoard (32) appears to have contained much scrap, most MBA2 palstave hoards in southern Britain and northern France contain predominantly complete axes, often unsharpened. Perhaps the factors which influenced the deposition of large axe hoards, especially of Armorican axes, during LBA4 and LBA3 were also present during MBA2. Only during LBA2 is there metallurgical evidence for large-scale re-use of scrap (J. P. Northover).

It appears to be difficult to prove the existence of any significant cross-Channel trade in raw metal so we may envisage in Britain a situation where copper and tin, with subsidiary ores like lead, were available in the highland zone, but the most important regional groups and individual deposits of artifacts and, presumably, the most important manufacturing centres, were in the lowland zone. During LBA3 when copper ingots occur in the lowland zone it is clear that the metal was probably transported in this state. It seems unlikely that supplies were haphazard or that individual founders made arrangement with individual miners far away. Perhaps the miners supplied middle-men who transported ingots and supplied the founders. These three stages must have existed but need not have been totally independent; distribution could have been controlled either by miners, or by founders, or the entire process could have been under central direction. Because most of the

Table 14

		No. of analyses	Average nickel
N. W. France Mainly Breton palstaves	Giot, Bourhis and Briard 1966 nos. 62-83, 89-100; 1970 nos. 426-463	72	0.202
Bernay hoard	Blin-Stoyle 1959 nos. 57-59, 63-69	10	0.705
S. coast hoards	<i>Ibid.</i> , nos. 225-228, 301-306	10	0.519
Other MBA palstaves from S. E. England	<i>Ibid.</i> , nos. 10-12, 15, 21-22, 154 405-408, 422-431	21	0.467

products of the highland mines found their way to the lowland founders, it seems unlikely that the miners were the dominant force. The mines may have been exploited on a colonial basis or by means of trade. The former suggestion implies a centralised power which seems unlikely in pre-Roman times except for brief periods. Some form of trade or exchange seems more likely and it is significant that one of the lowland areas rich in metalwork is part of the Fen region, proverbially the richest farmland in Britain. The discovery of large field-systems of earlier Bronze Age date around the Fens is less startling than Pryor supposes (1977, 14). It is tempting to envisage the exchange of agricultural produce for metal.

The repertoire of the bronzeworker includes weapons and other prestige items which imply the existence of a warrior class the production of whose weapons was more standardised and less localised than that of axes. These warriors must have exercised some dominance in society and should have been able to command the resources to obtain metal for their weapon-smiths and to distribute their products over a wider area than those of tool-smiths. This long-distance contact implies a measure of social stability and recognition of the movement of people and goods. The implications of such organisation have been emphasised for the Nordic area where all metal had to be imported over long distances. "Ein solcher Import war sicher in der damaligen Gesellschaft unmöglich ohne Kapitalkonzentration in einer komplizierten Organisation, bei der die politische Macht in wenigen Händen lag" (Nylén 1974, 109). "The power of this ruling class was based on trade" (Glob 1969, 309).

Britain was not isolated from the continent and southern England was in constant contact with northern France which probably obtained its copper from further south. Brittany, with its tin resources, stands in contrast with Cornwall, where no substantial local bronze industry flourished, and Brittany must have been able to obtain large quantities of copper. However, Breton exports across the Channel are scarce compared with those from north-eastern France. South-eastern England and north-eastern France, both areas without local metal resources, were able to engage in mutual exchange of artifacts throughout the Bronze Age. During MBA2 and LBA3 they were able

to obtain enough metal for substantial local industries; perhaps during LBA2 they had to rely more on re-use of local scrap. While scrap was also used during LBA3, ingots show that fresh metal was available. Exchange also took place during LBA1; weapons exemplify this best, the French axes in the Dover hoard (108) are not types otherwise found in Britain. The widespread distribution of its weapon types over the British Isles shows that southern England maintained contact with the rest of Britain to some extent, though it often had more in common with north-eastern France; this contact probably reflects ability to obtain ore from highland Britain at most times. If British founders needed large quantities of French ore or scrap, one might not expect to find significant British exports in France.

Iron

The most diagnostic items which represent the earliest regular use of iron in north-western Europe are the swords and horse-gear of Ha C date from the southern Low Countries (see p. 247, 254). In barrow 3, Court-Saint-Etienne (228) and in the Oss burial (231) are included most of the other types which were sometimes made of iron at this time: spearhead, knife, axe, flesh-hook and pin. Iron razors and tweezers were also current in Belgium at this time (lists 226, 19-20; 269). The status of the Melksham hoard (224), with its spearheads of bronze and iron, is uncertain; the Llyn Fawr hoard (218) contains an imported iron sword and an iron copy, presumably local, of an insular LBA4 type of sickle. During EIA1 iron daggers were produced in the lower Thames valley (see p. 249) and iron appears to have superseded bronze in southern Britain by this period.

Little work has been done on the early production of iron in western Europe and the use of small iron objects may go back to the Middle Bronze Age (see p. 84), but this brief section is concerned with the adoption of iron as the regular material for edged tools and weapons. While the use of bronze was not abandoned for ornaments, the change to iron would have resulted in considerable reorganisation of mining, smelting and distribution. Remains of early ironworking are scarce; a few pyramidal iron ingots (Doppelpyramidenbarren) are known from southern England and north-eastern France, but while these ingots appeared during Ha D they lasted into the Roman period (Kleemann 1966; Kimmig and Gersbach 1971, 54-56, Taf. 7). A site at Brooklands, Weybridge, Surrey, illuminates the subject in Britain (Hanworth and Tomalin 1977); this site is only about 100 m from the find-spot of the Weybridge ribbed pail (*ibid.*, fig. 2). Both smelting and forging were carried out on this site (*ibid.*, 15-22) in association with pottery of later (*ibid.*, 40-41, figs. 15, 18-20, 22-4) and earlier (*ibid.*, 37-40, figs. 14, 16-17, 21) Iron Age date. The exact date of the early pottery is uncertain, but should be pre-La Tène. Iron ore was available locally (*ibid.*, 22-23).

A brief study of the transition from bronze to iron in Gotland has suggested that it resulted in a more democratic society, since the concentration of power necessary to organise the import of bronze (see p. 305) was no longer necessary (Nylén 1974). This does not appear to have happened in central Europe or eastern France where Early Iron Age burials show social stratification more marked than during the Late Bronze Age. Cunliffe has noted the

change from bronze to iron in Britain and suggested that it was accompanied by stability which was only eroded by the later development of warrior aristocracy and large defended sites, caused perhaps by population increase (1974, 303-305). For Hawkes (1972, 114) the adoption of iron changed little in society, merely reinforcing the power and wealth of the ruling classes. We may agree with Champion (1975, 142) that the greater accessibility of iron in southern Britain must have been an important factor in its adoption there and this may also have applied to the lower Rhine area, despite the probability that the use of iron was introduced to this area by intrusive Hallstatt warriors. The convenience of locally-available metal in southern Britain might have been sufficient to encourage its adoption without attributing its first exploitation to Hallstatt invaders.

THE DEPOSITION OF METALWORK

This is a complex topic and I intend only to place British practice in a wider context with especial reference to the adjacent parts of the continent.

We should begin with hoards, groups of objects deposited together and never recovered during antiquity. It should be emphasised that very few hoards have been excavated under controlled conditions or had the site of their deposition examined and precise evidence about their position in the ground, their possible associations or their content is often lacking.

British scholars have preferred to interpret hoards as either merchants', founders' or personal hoards (Evans 1881, 457-463), with the addition of specialised craftsmens' hoards (Hodges 1957, 51-53), and have favoured such profane interpretations (Evans 1881, 457; Childe 1930, 43-45) rather than the religious interpretation first espoused by Worsaae for Nordic bog-finds (1866). Déchelette was cautious about the votive interpretation for lack of associated structures (1910, 166). Bronze Age hoards have thus, if implicitly, been regarded as treasure concealed in a secret place in time of danger, against later recovery. This interpretation is also current for Romano-British coin hoards; these were usually concealed away from inhabited sites and it may be relevant that Bronze Age hoards in Britain are rarely found in the immediate proximity of settlements (Robertson 1974, 13-14, 28). Only for a few large Irish deposits, Dowris being the best known, has a votive interpretation been offered (Eogan 1964, 311-314; Coles 1971b; Herity and Eogan 1977, 210).

This votive interpretation owes much to Hundt's study of Nordic Late Bronze Age deposits (1955). Hundt eschews the profane interpretation as Versteckfunden, preferring the religious interpretation as Weihefunden, often deposited at Opferplatzen (*ibid.*, 95-108). He concludes: "Die Masse der 'Depots' des jungbronzezeitlichen nordischen Kreises stellt Totenschätze dar" (*ibid.*, 123). Some specific finds are seen as personal cenotaph deposits, e.g. Redentin, Kr. Wismar, Mecklenburg, with a sword and two pairs each of bracelets and arm spirals (*ibid.*, 111, Abb. 1, 6-14). Founders' hoards may also have been cenotaph deposits (*ibid.*, 116-117); a large founder's hoard from Croatia has recently (in the Hundt Festschrift) been interpreted as a cenotaph deposit (Schauer 1974c, 121-124). Baudou is more cautious, regarding personal finds as votive but founders' hoards as profane (1960,

122-127), and von Brunn (1968, 230-239) has demonstrated the difficulty of applying Hundt's conclusions to other parts of Europe. I should be wary of regarding hoards as cenotaph deposits throughout different areas of Europe which have contrasting contemporary burial rites.

In the northern Netherlands, at the western edge of the north European plain, hoards are often found at the junction between bogs and sand ridges. A good example of this is Bargerroosterveld, Drenthe, where a concentration of finds, unusually large for the Netherlands, was found in the vicinity of the 'ritual' wooden structure (Butler 1960a, 114-115; Waterbolk and van Zeist 1961, 18). The finds and the structure were not all contemporary but a votive interpretation is probable. The only concentration of moor finds in the British Isles, besides the Irish deposits, is on the south-eastern margin of the Fens (Trump 1968, 222); it is otherwise difficult to distinguish moor finds from river finds. The Cambridge region must have had some attraction above that of areas of fen to the west and north but the British distribution of finds tends towards river valleys rather than areas of bog and the fen finds should presumably be seen in this context.

Burgess has pointed out the importance of water finds in Britain after the Early Bronze Age (1974, 196 n. 201; 197 n. 205) at a time when evidence for a regular burial rite almost entirely disappeared. The most important regional analysis of contexts is Davey's of Lincolnshire, where he points to concentrations of finds in river valleys and suggests some sort of cenotaph explanation (1971, 100-105). The interpretation of river finds faces many difficulties beginning with the identification of objects deposited in a water-course deliberately, as opposed to those deposited by erosion or flooding (Torbrügge 1970-71, 17-21). Concentrations of river finds are widespread and my own lists show that for Britain, northern France and the Low Countries the Thames, Seine, Scheldt, Meuse and Rhine/Waal were all important. The distribution of Hemigkofen and Thames swords shows that river finds were important at the beginning and end of the Urnfield period, not only in the Thames and the Seine, areas largely without contemporary burial tradition, but also on the lower Rhine where there was a flourishing burial tradition (*ibid.*, Beilage 11, 2; 16). Swords and burial were known throughout the later Bronze Age in the lower Rhine area but never in association, which suggests that river deposition was separate from burial ritual. Affinity of British and continental practice may also be demonstrated for shields and helmets (*ibid.*, 31, 43). Hencken's study of helmets shows that in western, northern and west-central Europe river and votive finds predominate, while hoard finds are usual in east-central Europe (1971, 13-14, fig. 1). This division between west and east can be duplicated for bronze shields (Torbrügge 1970-71, Beilage 18; Patay 1968). The British shields and the north French helmets may be regarded as complementary as shown by Schauer's composite distribution map (1975b). It is possible that the Fillinges deposit of armour represents the same distribution (Hencken 1971, 13) but greaves do not, for they were consigned to a hoard at Cannes-Ecluse (Gaucher and Robert 1967). Finds of Carp's Tongue swords in rivers unite southern Britain and northern France (Jacob-Friesen 1968, 272) but they are also found in hoards.

There is little evidence to suggest that motives for deposition in hoards and rivers were different in southern Britain and north-eastern France. The

negative evidence of lack of burials is removed in Belgium and the southern Netherlands where hoards and river finds are also known. The environment of the northern Netherlands allows incorporation in the Nordic zone of bog deposits and Dutch finds do appear to be significant from their marginal position. The deposition in wet places of some prestige items, bronze shields and helmets, shows uniformity over a very wide area. I would be cautious of the cenotaph theory because river deposits appear to override the distribution of various burial rites. Torbrügge's map of Gündlingen swords is somewhat misleading for it includes the predominantly central European class a with the predominantly British and Irish classes c and d (1970-71, 137, Beilage 17; cf. Cowen 1967 Maps C, E), while omitting the widespread class b (*ibid.*, Map D) which occurs in both burials and rivers in the Low Countries and blurs the distinction between continental burial finds and insular river finds. We must accept some votive aspect of finds in wet places, particularly of prestige objects, but these do not appear to be directly related to local burial traditions.

We may envisage similar practices for the deposition of bronze metalwork on both sides of the Channel during the later Bronze Age.

BOATS

In a study of relations across the Channel and the North Sea it is appropriate to give brief consideration to the relevant vehicles. The commonplace that transport by water was easier than transport by land in ancient times should be remembered. The Dover hoard (108), even if it is not the site of a shipwreck, must represent the cargo of a vessel which had crossed the Channel.

Dugout canoes were used from the Mesolithic onwards (Clark 1952, 282-287) and were employed throughout the Bronze Age in Britain (McGrail and Switsur 1975, 194-196), Ireland (Herity and Eogan 1977, 212) and France (Camps 1976, 193-196); though up to 15 m long (May 1976, 119), these canoes were presumably only for use on inland waterways. Beyond dugouts there are two groups of evidence: first, the remains of vessels from Brigg and North Ferriby and second, the Bronze Age representations of Scandinavia.

The boats from North Ferriby on the north shore of the R. Humber, Yorks., and Brigg on the R. Ancholme, Lincs., some 17 km away, form a related group of "probably the oldest remains of ancient plank-built boats found in Europe or indeed anywhere in the world outside Egypt" (Greenhill 1976, 109-110). The remains of three vessels are known from Ferriby (Wright 1947; 1972; 1976; Wright and Churchill 1965). They are of plank construction with a plank keel and transverse stiffening bars but no developed frame. From the most complete remains (Wright 1947, pl. XV) is reconstructed a vessel 16.5 m long with 2.5 m beam (Greenhill 1976, fig. 65). The so-called 'raft' from Brigg is of the same construction but its original shape is as yet undecided (McGrail 1975). The chronology of these vessels rests mainly on radiocarbon determinations which presently indicate dates of between 1500 and 1200 B. C. for Ferriby and around 600 B. C. for Brigg (McGrail and Switsur 1975, 192-194). These dates are provisional but place the Ferriby/Brigg tradition firmly in the Bronze Age. These boats

are regarded as for river or estuary work, insufficiently buoyant for the open sea, but perhaps larger than more buoyant skin boats (Wright and Churchill 1965, 23-24). The Ferriby boats bore chisel and axe/adze marks (Wright 1947, 121-123, pl. XIV) and it should be recalled that many sophisticated techniques of woodworking only became possible with the introduction of bronze tools (Clark 1952, 213; Waterbolk and van Zeist 1961, 17-18).

Nordic representations on rocks or on bronze objects show thousands of boats from all phases of the Bronze Age (Glob 1969, 15-56, 287-291; 1974, 146-148; Marstrander 1963, 39-166, 442-451) and the distribution of the rock-carvings suggests that sea-going vessels were the models (*ibid.*, 444). The single most informative representation is a rock-carving at Bradskog, Uppland, Sweden, which shows a vessel propelled by six figures with paddles (Norden 1925). The engraving on the blade of a MI/II curved sword from Rørby, Holbaek Amt, Jutland, has thirty-six marks which can be interpreted as seventeen pairs of paddle-men, a steersman and a lookout (Glob 1974, 146; Aner and Kersten 1976, 6-7 no. 617, Taf. 141). The Scandinavian representations can be classified (Marstrander 1963, pl. 64; Glob 1969, fig. 37); high stem and stern, often with a figure-head, are usual and the line of the keel is often extended. Hide-boats are probably represented (Marstrander 1963, 444-451; 1976, 14-15), never certainly with a functional sail; a modern reconstruction proved perfectly seaworthy (Johnstone 1972; Marstrander 1976). The wooden bowl with gold ornament from Caergwrle, Flint. (Savory 1976a, 16-17, 52 no. 2, fig. 1), has been identified as a hide-boat (Greenhill 1976, 121-122), though Hawkes has claimed that it represents a Phoenician vessel engaged in the tin trade (1969, 191).

Case has shown how sea-going vessels with a certain capacity for cargo would have been necessary for the initial Neolithic colonisation of Britain. These were probably hide-boats; concomitant skills and experience of boat-building and seamanship can be inferred (1969, 178-180).

We can distinguish three traditions of boat-building in the Bronze Age of northern and western Europe. Dugouts for inland waterways and hide-boats for the open sea both already ancient, and plank-built boats which had recently appeared and can scarcely have been restricted to the Humber estuary. These vessels would have been used for river transport and for coasting; they would also have been necessary to negotiate the floods which must often have inundated low-lying coastal areas around the North Sea; they would have been used to cross the open sea. Scandinavian boats were probably important because they bore the imported bronze so significant economically and socially in the Nordic area (Glob 1969, 309). Boats were probably equally important to the upper classes of southern Britain, especially if their bronze ever had to be brought across the Channel in any quantity. There must have been some tradition of sea-faring among the coastal communities of the Channel and the North Sea. A recent reconstruction of the exploits of the writer's patron saint has shown that a boat built with materials and techniques available in the Irish Early Christian period, little different from those available during the Bronze Age, could cross open ocean (Severin 1978).

CHAPTER 9

CONCLUSIONS

The distribution of metalwork in southern Britain, north-eastern France, Belgium and the Netherlands from the end of the Early Bronze Age to LBA3 shows remarkable consistency in several aspects.

The principal local concentrations are outstanding through all phases, though absolute quantities differ among the various concentrations. The lower Thames valley and the area south-east of the Fens are the two principal concentrations in Britain. In north-eastern France the valleys of the Seine, Somme and Oise have produced most material. The lower Scheldt and the lower Meuse, with the adjacent stretch of the Rhine, are the most productive areas in the southern Low Countries and the province of Drenthe the most productive in the north.

The mutual relations of these areas were also consistent. The northern Netherlands shared many types with the adjacent part of north-western Germany and often formed the western margin of Nordic distributions. Axes demonstrate this well. Ekehaar flanged axes, north Dutch palstaves and north Dutch socketed axes were all derived from north-west German types, while further south, lower Meuse palstaves and socketed axes were also current in the adjacent parts of Germany. Geistingen axes and local linear-faceted axes reflect this southern distribution at a later stage, while Baexem stone axes occur throughout the eastern Netherlands as the western margin of a north European distribution of stone axes. Nordic spearheads were usually predominant in the eastern Netherlands. Double-T-hilted knives and single-edged socketed knives were characteristic Dutch types with Nordic and north-west German affinities and Nordic razors and tweezers of LBA3 were predominant in the northern Netherlands. The two rich finds from Drouwen are of Nordic character: the Sögel burial (75) is the richest of its kind and the LBA3 find (201), also perhaps a burial, contained objects of Nordic and north-west German origin, principally the bowl and the brooch. Sögel and Wohlde swords spread through the Netherlands and into Belgium. Some characteristic north Dutch types were of central European origin, Odoorn and omega bracelets, cf. the original central European inspiration of Dutch single-edged knives. Throughout the Bronze Age and the Early Iron Age the northern Netherlands employed pottery forms, burial-rites and house-types closely related to those current in north-western Germany.

The relations of the southern Netherlands were more mixed than those of the north. In the east, especially in the lower Meuse valley, the axe types mentioned above were related to those in adjacent parts of Germany and some north Dutch or Nordic types also appeared. Of middle Rhine origin were median-winged axes, while Urnfield swords and pins were also derived from

or through this area. The westerly part of the southern Netherlands often shared with Belgium a preference for axes of western origin: shield-pattern palstaves, broad-bladed MBA2 palstaves and LBA3 socketed axes. Tréboul swords and spearheads, Plougrescant-Ommerschans swords, Rosnoën swords, Carp's Tongue swords and Armorican socketed axes showed influence from northern France, but never in large quantity, though there may have been greater significance in the Tréboul/Plougrescant-Ommerschans finds in the Netherlands than in the later French types. MBA2 ornaments, LBA2 weapons and many LBA3 'Carp's Tongue' types common in southern Britain and north-eastern France are largely absent from the southern Netherlands.

Apart from some lower Meuse axes, Belgium tended to employ western axe types from Arreton axes, through MBA palstaves, to median-winged axes, also current in north-eastern France, though perhaps of middle Rhine origin. Many LBA3 socketed axes were imports from the west and local types should have been derived from this area. While some western types had concentrations in Belgium, e.g. straight-based basal-looped spearheads, most of the western types mentioned as largely absent from the southern Netherlands were also scarce in Belgium. The central European swords found in the southern Netherlands were often also to be found in Belgium. The Belgian LBA3 industry produced bracelets under central European and middle Rhine influence as well as socketed axes under western influence and shared some ornaments with Picardy. Central European and middle Rhine bronzes occur on a large scale at Han (194) with pottery of the same origin, but such pottery is rare elsewhere in Belgium and absent from the 'Urnfield' cemeteries of the lower Rhine area. These cemeteries are very poor in metal grave-goods and one characteristic type, the penannular gilded ring, is of Irish origin via Britain. Some of the Urnfield bronze types present on the lower Rhine, e.g. swords, occur further afield and cannot be used as indices of the presence of the 'Urnfield culture'. I am not competent to adjudicate on the degree of similarity between pottery and burial-rite of the late Bronze Age cremation cemeteries in the southern Netherlands and Belgium and those of the central European Urnfield culture. Four points may be made. First, the pottery and burial-rite on the lower Rhine have much in common with those current in the German Rhineland. Second, there is a consistent distinction between these features on the lower Rhine and in the northern Netherlands. Third, there is, as yet, little evidence for similarity between the pottery of the lower Rhine area and that of Urnfield cemeteries in eastern France. Fourth, after the cross-channel contact evidenced by Hilversum urns and ringwalheuvels, relations between southern Britain and the southern Low Countries represented by pottery and burial-rite declined in strength; by the later part of the Late Bronze Age, even if there are significant similarities in the pottery to be detected, there is an absolute contrast in burial-rite.

At all periods except LBA2 north-eastern France derived a considerable number of types from eastern France, the middle Rhine and elsewhere in central Europe. During the Middle Bronze Age swords and daggers, ornaments, razors and tweezers of Tumulus origin all reached north-eastern France; some of these types were adapted or imitated to give characteristic local types, e.g. Picardy pins. In the early Urnfield period come median-winged axes, swords, especially the rod-tanged type, and pins, with leaf-shaped flange-

hilted swords, tanged knives and sheet-bronze armour a little later. There was less contact during LBA2, only kidney-shaped bracelets and, no further than the Oise, a few flange-hilted swords. Bracelets and swords of late Urnfield origin were represented more plentifully during LBA3, the swords mainly solid-hilted and the bracelets inspiring local imitation. Other late Urnfield ornaments were pins, pendants, belt ornaments and neck-rings, with sickles, single-edged knives, fish-hooks, razors and horse-gear. While north-eastern France shared many types with the north-west, there were significant contrasts. During MBA1 there were Tréboul and related weapons and similar flanged axes and palstaves in both areas. Weapons were common during MBA2, but Breton and Norman palstaves were distinct and there were broad-bladed palstaves in the Somme-Oise-Aisne region. Palstaves were dominant during LBA1 in the Rosnoën industry, but median-winged axes were more common in north-eastern France. Early Urnfield swords and straight-based basal-looped spearheads were less common beyond the Seine than in north-western France. LBA2 appears to have imposed greater unity but there was again a divergence in tools during LBA3 when end-winged axes were preferred in the north-west and socketed axes in the north-east. Many of the late Urnfield types and their derivatives current in north-eastern France at this time were rare in the north-west and the full range of Breton Carp's Tongue ornaments was not present in the north-east. Later, large hoards of Armorican socketed axes were rare beyond lower Normandy.

Southern Britain shared many types with north-eastern France; the overall distribution of finds in southern Britain is concentrated in the south-east with the area nearest Brittany, the south-west peninsula, comparatively poor. A few Arretton axes occur in north-eastern France. The broad-bladed palstaves of the Somme-Oise-Aisne area are very similar to British forms and some are imports from Kent and Sussex; Norman palstaves are common in hoards in southern England, especially on the coast of Hampshire and Sussex, while Breton palstaves are rare in English hoards. The trapezoidal-hilted rapier was the principal weapon throughout Britain and northern France during MBA2; Middle Bronze Age looped spearheads were employed in northern France, especially in the Seine valley. Southern Britain shared Picardy pins and decorated bracelets with northern France and ribbed bracelets may have been derived from Tumulus models via northern France. With the exception of socketed axes, the tools current in southern Britain could have come from France; the axes, like neck-rings, were of north German origin. French influence must have been exercised on the deposition of MBA2 hoards in southern Britain; the largest of these are on the south coast nearest Normandy and contain many Norman palstaves, in East Anglia, where palstaves are common but imports scarce, such large hoards are absent.

The deposition of large hoards of axes in north-eastern France and southern England almost ceased during LBA1; this is especially notable in the two areas most prominent for MBA2 palstave hoards, the lower Seine valley and the south coast of England. Apart from the Dover hoard (108), north French types are rare in Britain at this time, especially tools, Rosnoën palstaves and median-winged axes. Rapiers were preferred in Britain, Rosnoën swords in France and straight-bladed early Urnfield swords had

little impact on Britain. Pegged spearheads were re-adopted in Britain under French influence; in northern France straight-based basal-looped spearheads were most common in the Seine valley. The Urnfield armour adopted in France was not adopted in Britain, nor did the earliest Urnfield pins reach Britain. During later LBA1 leaf-shaped swords, Urnfield pins and Urnfield knives passed through northern France to Britain and some of the first insular leaf-shaped swords were re-exported.

During LBA2 swords, chapes and tubular ferrules were shared between southern Britain and northern France, though the variety of spearheads current in Britain at this time was not matched in France. Axes were scarce during LBA2, winged axes confined to France, while palstaves and socketed axes were employed on both sides of the Channel, but usually in different forms. Some tools, e.g. socketed gouges, were probably introduced into Britain from France at this time. Horse-gear and cauldrons were confined to Britain. The distinctive LBA2 Wilburton industry of southern Britain had more in common with northern France than with northern Britain and the south-easterly distribution of Wilburton material should reflect contact with north-eastern France rather than north-western France, cf. the concentrations of swords and chapes in the Fens and the lower Thames valley with the concentrations in the valleys of the Seine, Somme and Oise.

While the Plainseau type of socketed axe is a distinctive form in north-eastern France during LBA3, its companion type atlantique is little different from the British south-eastern type. North-eastern France shared with Britain a preference for the socketed axe over the winged axe but the south-easterly distribution of winged axes in Britain suggests that they were derived from north-eastern France. This is so for a variety of Carp's Tongue types found in Britain: the eponymous swords, decorated spearheads, hog's-back knives, one-piece bugle-shaped objects and Carp's Tongue ornaments. Some so-called 'Carp's Tongue' types are more common in Britain and north-eastern France than in north-western France, e.g. small bag-shaped chapes and plain slides. Most common tools were shared between Britain and northern France during LBA3. The various bracelets characteristic of north-eastern France at this time often occurred sporadically in southern Britain, usually around the Thames estuary; the Urnfield ornaments of middle Rhine or west-Alpine origin found in this area were probably transmitted via north-eastern France, like items of late Urnfield horse-gear. Socketed axes common in northern Britain appear not to have reached the continent, while the South Welsh type, characteristic of western Britain, was more common in western France than in the north-east.

At the time of Hilversum urns a few vessels of British origin occurred in north-eastern France and the pottery and burials of the Eramécourt group in Picardy had some traits in common with Britain. During the Late Bronze Age both southern Britain and northern France were marked by a lack of regular burial-rite. It remains to be seen how real is this negative evidence; though more Urnfield cemeteries may be discovered north of the Marne, this river appears to have marked a genuine, if fluctuating, cultural division. This may be reflected by the affinities of the hoards in the Paris area, including the lower Marne; during the Middle Bronze Age and LBA2 these were with the

Atlantic region, during LBA1 and LBA3 more with eastern France and central Europe (J.-P. Mohen).

The pattern of distribution of metalwork in Britain during LBA4 showed the same concentrations as the previous phases, notably the lower Thames valley and the Fen margins, as the same classes of prestige items were imported as before, swords with chapes and horse-gear. Fundamental changes had taken place on the continent. Ha C metalwork was scarce in north-eastern France; a few small hoards containing Armorican socketed axes, occasionally with some LBA3 types, should belong to this phase and a few imports from Britain are known, but bronze was probably soon superseded by iron as the regular material for tools and weapons.

In Belgium and the southern Netherlands appeared a group of rich Ha C burials presumably representative of warriors from southern Germany. These burials contained some items of horse-gear current in Britain during LBA4 but others unknown in Britain. While these warriors employed some bronze Hallstatt swords, they also had, in approximately equal numbers, the long iron swords known from Britain in only a single instance. Some burials contained sheet-bronze vessels as cremation urns. Emphasis has often been laid on the items which these Ha C burials, notably those from Court-Saint-Etienne, have in common with Britain, but this has obscured fundamental differences. Such rich burials are unknown in Britain where Hallstatt swords, horse-gear and sheet-bronze vessels are not associated with cremation burials. The Wijchen burial (232) was probably a wagon burial; no wagon burial is known from Britain. Their best swords were made of iron which was often employed for horse-gear and other items, whereas iron was not in regular use in Britain during LBA4. No particular classes of pottery are characteristic of the rich burials in the Low Countries and more work is needed to establish the nature and extent of any affinities between the pottery of this period in the southern Low Countries and contemporary British pottery, not least the establishment of a British sequence incorporating new material from Late Bronze Age sites in the Thames valley.

By EIA1 it appears that iron had replaced bronze as the regular metal for tools and weapons in southern Britain, though little material can be attributed to this phase. Most notable are the iron daggers from the lower Thames valley, which show that this area could still reflect central European trends. If the original inspiration of these daggers was from southern Germany, their subsequent development into the La Tène period reflected the series of dagger in final Hallstatt and early La Tène cemeteries in the Marne valley and some British pottery of EIA1 date may be related to pottery from this area. Burials of especial wealth were rare during Ha D in the Low Countries but a strong measure of continuity from the preceding phase is evidenced by the pottery and burials both in the south, and in the north where different traditions were still current.

Relations between south-eastern England and north-eastern France were constant from the Middle Bronze Age to LBA3. The south-easterly distribution of metalwork in southern Britain suggests that relations with north-eastern France were stronger than relations with the north-west; this is

borne out by the distribution of many types during MBA2 and LBA3 and of fewer during LBA1. Types characteristic of Brittany but rare in north-eastern France were almost always rare in Brittany and, before Armorican socketed axes, no type characteristic of north-western France was more common in south-western Britain than in the south-east. In reverse, apart from Acton Park palstaves and South Welsh socketed axes, there is little evidence of types characteristic of western Britain being found in France predominantly in the west.

Beyond the Somme valley types of south-east English origin may be found as far as the lower Rhine, especially MBA2 palstaves and LBA3 socketed axes, but important parts of 'Atlantic' industries were usually absent from the southern Low Countries. Local industries in the lower Meuse valley and the northern Netherlands owed more to the adjacent parts of Germany than to the west. If British types of central European origin were derived via the lower Rhine, they were usually either not adopted in adjacent parts of the continent, like Nipperwiese shields and Kurd buckets, or present also in north-eastern France, like leaf-shaped flange-hilted swords, and the earliest Urnfield swords in Britain were derived from the Seine valley. There was some influence on southern Britain from northern Europe during MBA2, socketed axes and cast twisted neck-rings, and LBA2, cauldrons and stepped phalerae, but other types, especially of MBA2 date, supposed to have been derived from northern Europe were more likely of French origin.

From the Middle Bronze Age to LBA3 southern Britain and north-eastern France shared deposition of metalwork in hoards of similar character: axe hoards in MBA2, few hoards in LBA1, scrap hoards in LBA2, more mixed hoards in LBA3. Metalwork, especially weaponry, was regularly deposited in or near rivers but only rarely in burials. During the later part of this period there is little evidence for a regular burial-rite on either side of the Channel. Some of these phenomena are widespread, notably river finds, but the similar combination of circumstances of deposition of metalwork in southern Britain and north-eastern France is striking; one contrast is on settlements, some French hillforts have far more metalwork than any known British settlement.

The LBA4 bronze industry in southern Britain continued with little change from LBA3 except a decline in scale. The British distribution of Armorican socketed axes shows a concentration in Wessex. Though some hoards of Armorican socketed axes are known in north-eastern France at this time, iron was probably replacing bronze there. Rich Ha C burials of intrusive character appeared in the southern Low Countries; while they shared some items of horse-gear and bronze Hallstatt swords with southern Britain, they had a preference for long iron swords not current in Britain, and the very existence of rich cremation burials, one with a wagon in central European tradition, is a mark of contrast with Britain not of contact.

Only during the subsequent phase, EIA1, did bronze cease to be the regular material for tools and weapons in southern Britain; it was presumably superseded by iron, but few types can be dated to this phase. The most characteristic, Thames daggers, soon showed affinities with Early Iron Age daggers of the Marne valley; they demonstrate continuation of the adoption

and adaptation of central European weaponry in the lower Thames valley. Evidence for a regular Early Iron Age burial rite in southern Britain and north-eastern France is still largely negative, though the Late Bronze Age tradition continued with little change in the Low Countries and cemeteries are also known in north-western France. The continental affinities of the pottery of the later Bronze Age and Early Iron Age in southern Britain have still to be comprehensively investigated.

It may come as no surprise that the continental relations of southern Britain were closest with north-eastern France as the distribution of metalwork in Britain is predominantly south-easterly. If south-eastern England could command more metalwork than those parts of highland Britain which had raw metal resources, it should also have been able to enjoy continental relations denied to highland Britain. The distribution of axe types in Britain was usually localised, while that of weapon types was usually widespread, but from the establishment of south-easterly predominance during the Middle Bronze Age most novel types of axe and weapon appeared first in and were most numerous in the south-east. All this implies some sort of economic superiority of south-eastern England over the rest of Britain during the later part of the Bronze Age and the beginning of the Iron Age. It remains to be seen whether the investigation of settlements and environmental evidence, especially around the Fens and in the Thames valley and estuary, will support this hypothesis.

Elucidation of the problems discussed here will depend on comprehensive publication of metalwork on both sides of the Channel accompanied by analysis of as many objects as possible to provide for objective interpretations based on typology and metal content. Investigation of sites with remains of metalworking will enable the results derived from the study of the metalwork to be integrated into our understanding of the social and economic framework of the European Bronze Age.

CATALOGUE

NOTE

The finds in the catalogue are arranged, by country, in the same chronological divisions as the chapters in the text; i.e. MBA; LBA 1; LBA 2; LBA 3; LBA 4/EIA 1. The element by which each find is usually denominated is underlined.

BRITAIN

1. Wantage, Berks.

Burgess 1969a, pl. XIII; Rowlands 1976, 225 no. 4, pl. 7.

Hoard. From left to right on Burgess's plate: Broad-bladed palstave with psi-ornament. Two Breton palstaves. Looped Norman palstave. The looped Norman palstave may be compared with the example in the La Chapelle hoard (46) 1.

2. Slough Trading Estate, Burnham, Bucks.

Pearce-Serocold 1933; Rowlands 1976, 225 no. 6, pl. 1. Buckinghamshire County Museum, Aylesbury. Figs. 1, 2A.

Hoard, originally nineteen palstaves, eighteen preserved. Four side-flanged palstaves with long midrib, Fig. 1, 1-4. Two side-flanged palstaves with short midrib, 5-6. Two side-flanged palstaves with long midrib, 7-8. Palstave with long midrib, 9. Looped palstave with shield-pattern and pendant midrib, 10. Palstave with narrow blade and triangular inset containing ribs, 11. Palstave with multiple short ribs, 12. Palstave with cordiform inset containing U-rib, Fig. 2A, 13. Three palstaves with inset, 14-16. Palstave with narrow blade and divided inset, 17. Palstave with long inset, 18.

The side-flanged palstaves may be compared with examples in several Sussex hoards: Billingshurst (31), Marshall Estate (32) 7-8, Near Bognor (33), Blackrock (34) 9-13 and Rustington (36). The examples with insets, 14-16, may be compared with those in the Birchington (23) 8-11 and Near Canterbury (24) 3 hoards and there is a similar palstave in the Gisors hoard (47) 1.

3. Cambridge area, Cambs.

A. J. Lawson, B.A.R. 67, 1979. CMAE.

Hoard, probably from the Cambridge area. Eight pennanular decorated bracelets. Six with D-section and contiguous terminals, slightly expanded outwards in four cases. The two others are less massive with simpler ornament.

4. Tredarvah, Penzance, Cornwall.

Anon 1963; Rowlands 1976, 276 no. 167, pl. 12

Occupation site. Flanged axe, Rowlands 1976, pl. 12, 2.

Decorated socket-looped spearhead, 1. Single-edged tanged knife with rivet hole in the tang, 3. Fragments of a quoit-headed pin, 4. Fragments of a pin with trumpet head and swollen shaft, looped and decorated, 5. Fragments of a double spiral, 10-11. Miscellaneous fragments of pin shafts and ? sickle blades. Pottery.

The knife is too fragmentary to be diagnostic. The decorated pin is related to the Picardy type. The double spiral is unique in the British Isles (Rowlands 1976, 97). The pottery belongs to the Trevisker series (ApSimon and Greenfield 1972, 358, 372).

5. Crediton, Devon.

Inv. Arch. GB4; Rowlands 1976, 229, no. 21.

Hoard. Rapier with broad midrib, no rivet-holes. Inv. Arch. GB4,

1. Rapier, lozenge-section blade with offset edges, 2. Looped Norman palstave, 3. South-western palstave, 4.

Looped Norman palstave cf. La Chapelle hoard (46) 2. The first rapier belongs to Group IV, the second to Group III (Burgess 1968c, 13-14, 24 no. 9).

6. Dewlish, Dorset.

Rowlands 1976, 231 no. 31, pl. 7; Drew 1933. Dorset County Museum Dorchester. 1902.1.1-5. Fig. 2B.

Hoard, originally six palstaves, five preserved. Looped south-western palstave, tapering midrib, Fig. 2B, 1. Looped Norman palstave, trident ornament, 2. Looped Norman palstave, triangular inset containing ribs, 3. Norman palstave with oblique rib, 4.

Norman palstave with double inset, 5.

The looped Norman palstaves may be compared with examples in the hoards from La Chapelle (46) 2 and La Queue-les-Yvelines (72) and the unlooped Norman palstaves with Bourneville (45) 2, Mont-Saint-Aignan (61) 6 and Chambourcy (71) 2.

7. Eglesham Meadow, Dorchester, Dorset.

Rowlands 1976, 231 no. 32, pls. 11, 54. Dorset County Museum, Dorchester. 1884.9.21-24. Fig. 3A.

Hoard. Two Plain penannular bracelets, D-section, Fig. 3A, 1-2.

Looped south-western palstave, trident ornament, 3. Looped south-western palstave, tapering midrib, 4.

8. Grimstone, Dorset.

Rowlands 1976, 232 no. 34, pls. 11, 54; Farrar 1964, 115. Dorset County Museum, Dorchester. 1903.15. Fig. 3B.

Hoard, only the annular bracelet was accessible to me. Flanged axe, trident ornament, Rowlands 1976, pl. 11, 3. Looped palstave with thick midrib, 1. Looped Norman palstave with divided inset, 2. Penannular lozenge section bracelet, 5. Annular bracelet with hollow, concavo-convex section and incised ornament, Fig. 3B, 1.

9. Grays, Essex.

Rowlands 1976, 234 no. 41, pl. 7.

Hoard. Flanged axe with developed stop-ridge and trident ornament, Rowlands 1976, pl. 7, 1. Breton palstave, 2.

10. Burley, New Forest, Hants.

Rowlands 1976, 238 no. 57, pl. 5; Sumner 1927. BM. 1927.1-7.1-2. Fig. 3C.

Hoard. Eleven palstaves, probably from the same mould, shield-pattern containing rib, Fig. 3C, 1. Shield-pattern palstave, 2. The eleven palstaves are typologically later than the single example and may be compared with those in the hoard from Titchfield, Hants (Rowlands 1976, 243 no. 72, pl. 5). The shield-pattern containing a rib appears to be absent from other south coast hoards and Burley and Titchfield are probably the earliest palstave hoards in this area.

11. H.M.S. Sultan, Gosport, Hants.

Rowlands 1976, 239 no. 59, pl. 56. Southsea Castle Museum. Figs. 3D, 4.

Hoard. Annular bracelet, irregular D-section, corroded, Fig. 3D, 1. Breton palstave, 2. Looped Norman palstave with trident ornament, 3. Isle of Wight Palstave, 4. Palstave with indistinct stop-ridge and midrib, Fig. 4, 5. Palstave with indistinct stop-ridge and short midrib, 6. Palstave with curved stop-ridge, 7. Palstave with faint trident ornament, 8. Three side-flanged palstaves with psi-ornament, 9-11. Five palstaves with psi-ornament, 12-16. Palstave with shield-shaped inset and midrib pendant from stop-ridge, 17. Palstave blade with midrib, 18. Palstave blade with divided inset, 19.

The side-flanged palstaves with psi-ornament can be matched in the Gable Head hoard (12) 18 and palstaves with indistinct stop-ridge and midrib in the hoards from Gable Head, 23, and Pear Tree Green (15) 14-16 and from the settlement site at Chalton, Hants (Cunliffe 1970, 11, fig. 5, 4; Fig. 26, 6). The palstave with a curved stop-ridge may be compared with examples in the hoards from Birchington (23) 12-13 and Near Canterbury (24) 6, Kent. The Norman palstave may be compared with examples in the hoards, from La Chapelle (46) 5, Heuqueville (60) 2, Rouen (62) 3 and Aubergenville (69) 2.

12. Gable Head, Hayling Island, Hants.

Rowlands 1976, 239 no. 60, pls. 55-56. Southsea Castle Museum. Figs. 5, 6, 7A.

Hoard. Annular bracelet, massive oval section, incised ornament, Fig. 5, 1. Broken bracelet, massive D-section, undecorated, 2. Fragment of a quoit-headed pin, 3. Rowlands records twenty-seven palstaves, twenty-five were accessible to me. Isle of Wight palstave, 4. Centre-ouest palstave, 5. Looped Norman palstave with short tapering rib, 6. Looped Norman palstave with tapering rib, 7. Looped Norman palstave with converging ribs, 8. Looped Norman palstave with Y-ornament, 9. Looped Norman palstave with trident ornament, 10. Looped Norman palstave with grooved trident ornament, 11. Looped Norman palstave with midrib, 12. Looped Norman palstave with inset and faceted ornament. Different patina from the rest of the hoard, Fig. 6, 13. Two Norman palstaves with triangular

inset, 14-15. Norman palstave with converging ribs, 16. Norman palstave with trident ornament, 17. Two side-flanged palstaves with psi-ornament, 18. Looped side-flanged palstave with psi-ornament and grooves on sides, 19. Side-flanged palstave with psi-ornament containing ribs, 20. Looped side-flanged palstave with psi-ornament containing ribs, 21. Palstave with inset and midrib pendant from stop-ridge, 22. Palstave with indistinct stop-ridge and midrib, 23. Palstave with large triangular inset, 24. Looped palstave with V-ornament, 25. Two palstaves with three short ribs, Fig. 7A, 26, 28. Palstave with five short ribs, 27.

The looped Norman palstaves can be matched in the hoards from La Chapelle (46) 1, 3, 5, Heuqueville (60), 2, Rouen (62) 3, 5, Verneuil (64) 15 and Aubergenville (69) 2 and the unlooped Norman palstaves in: La Chapelle (46) 7, 17, Heuqueville (60) 12 and Sucy-en-Brie (68) g. Gable Head, 17, resembles the looped Norman type in form and ornament. The centre-ouest palstave may be compared with the examples in the Ménigoute hoard, Deux-Sèvres (Patte 1970, pl. II, 15-17). The looped side-flanged palstave with psi-ornament containing ribs may be compared with the palstave in the Leavington House hoard (20) 4. For the side-flanged palstaves with psi-ornament and the palstave with indistinct stop-ridge and midrib, see Gosport hoard (11).

13. Bower's Farm, Plaitford, Hants.

Rowlands 1976, 242 no. 67; Hawkes 1942, 44-47, fig. 11, pl. VI.

Find in a sand-pit. Two cast twisted neck-rings with hooked terminals, Hawkes 1942, pl. VI. Fragmentary pin, lacking head and point, looped swollen shaft bearing diagonal ornament bounded by bands of ribs with another band of ribs below the loop, *Ibid.*, fig. 11. Fragments of globular urn and a cylindrical clay loom-weight were found nearby.

The form of the pin resembles that of the examples from the R. Fowey (List 37, 1).

14. Fratton, Portsea Island, Hants.

Drawings in Carisbrooke Castle Museum.

Hoard of four palstaves, drawings of two preserved; both are unlooped, broad-bladed palstaves.

15. Pear Tree Green, Southampton, Hants.

Rowlands 1976, 241 no. 66, pls. 6, 54; Dale 1897-99. Winchester City Museum. 313.1-24; BM. WG 2234-5. Figs. 7B, 8A.

Hoard, originally forty-one palstaves with additional fragments. Twenty-one reasonably complete examples were accessible to me. Two looped Norman palstaves, trident ornament, Fig. 7B, 1-2. Looped Norman palstave, Y-ornament, 3. Two looped Norman palstaves, undecorated, 4-5. Looped Norman palstave, tapering rib (BM), 6. Two Norman palstaves with midrib and slight inset, 7-8. Norman palstave with long inset, 9. Norman palstave with

divided inset, 10. Isle of Wight palstave, Fig. 8A, 11. Looped side-flanged palstave with midrib, 12. Looped side-flanged palstave with trident ornament, 13. Three palstaves with indistinct stop-ridge and midrib, 14-16. Palstave with inset containing rib, 17. Three corroded, undecorated palstaves, 18-20. Corroded, undecorated palstave (BM0, 21).

The looped Norman palstaves may be compared with examples in the hoards from La Chapelle (46) 3, 5, Heuqueville (60) 1-2, Rouen (62) 3, 5, Verneuil (64) 13, 15 and Aubergenville (69) 2; the unlooped Norman palstaves may be compared with Heuqueville (60) 7, 10, Mont-Saint-Aignan (61) 6, Bourlay (44) 7 and Gisors (47) 5, 7. The looped side-flanged palstaves can be matched in Sussex hoards: Billingshurst (31) 5, Marshall Estate (32) 8 and Rustington (36) 5. For palstaves with indistinct stop-ridge and midrib, see Gosport hoard (11).

16. Swanwick, Hants.

Rowlands 1976, 240 no. 63, pl. 7; Fox 1928, 334, pl. XLVIII, fig. 2.

Hoard, originally four palstaves, three preserved. Looped Norman palstave, Rowlands 1976, pl. 7, 3. Isle of Wight palstave, 2.

Palstave with shield-pattern containing ribs, 1.

17. Woolmer Forest, Hants.

Rowlands 1976, 243 no. 74, pl. 13.

Hoard. Palstave with short septum, midrib and slight inset on blade, Rowlands 1976, pl. 13, 1. Two penannular bracelets, massive section, 2-3. Penannular bracelet, massive D-section, 4. Annular bracelet, massive oval section, 5. Spiral ring formed of the terminal of a cast twisted neck-ring, probably originally hooked, 6. Ring formed of a fragment of a cast twisted neck-ring, 7.

18. Between Newport and Fairleigh, Isle of Wight.

Rowlands 1976, 240 no. 64, pl. 58. Carisbrooke Castle Museum. Fig. 9A.

Hoard. Three Isle of Wight palstaves, Fig. 9A, 1-3. Sixteen other Isle of Wight palstaves. Two palstaves with indistinct shield-pattern, 4. Palstave with inset containing rib, 5. Palstave with triangular divided inset, 6. Palstave with long divided inset, 7. Palstave, undecorated, 8.

19. Mitchells Road, Haylands, Ryde, Isle of Wight.

Rowlands 1976, 242 no. 69. Carisbrooke Castle Museum. Fig. 8B.

Hoard, originally five palstaves four preserved. Four Isle of Wight palstaves, Fig. 8B, 1-4.

20. Leavington House, St. John's, Ryde, Isle of Wight.

Rowlands 1976, 243 no. 71. Carisbrooke Castle Museum. Figs. 9B, 10A.

Hoard, originally twelve palstaves, eight preserved. Looped Norman palstave with V-ornament, Fig. 9B, 1. Looped palstave with broad inset, 2. Looped palstave with inset and midrib pendant from the stop-ridge, 3. Looped side-flanged palstave with psi-ornament containing ribs, 4. Palstave with cordiform inset and midrib pendant from stop-ridge, Fig. 10A, 5. ? Norman palstave with inset, 6. Palstave with trident ornament, 7. Another palstave.

The looped Norman palstave may be compared with the example in the Livet hoard (48) 1 and the looped side-flanged palstave with psi-ornament containing ribs with the example in the Gable Head hoard (12) 21.

21. Werrar, Isle of Wight.

Rowlands 1976, 243 no. 73, pl. 6; Dunning 1936a. C.M.A.E. 34.812-817. Fig. 10B.

Hoard. Four Isle of Wight palstaves, Fig. 10B, 1-4. Looped palstave with divided inset, 5. Looped palstave with divided inset and median ridge on blade, 6.

22. ? Billingham House, Newport, Isle of Wight.

Rowlands 1976, 206, 240 no. 61, pl. 17. Carisbrooke Castle Museum.

? Hoard, neither provenance or association is assured. Cast twisted neck-ring with hooked terminals, Rowlands 1976 pl. 17, 1. Neck-ring, massive round section, incised ornament, hooked terminals, 2.

The motifs on the incised neck-ring, lines, zig-zag, hatching and pointed oval are all within the repertoire found on decorated bracelets. Neck-rings with incised ornament occur in northern Germany. In Mecklenburg most are MIII and have plain terminals (Schubart 1972, 27-28, Taf. 2, D8; 99, L., S). Similar ornaments are known in MIV in the Ilmenau area (Sprockhoff 1937, 43-44, Abb. 19, 9, Taf. 20, 17) and in Pomerania (Kersten 1958, Taf. 10, 114). Incised ornament does not appear to have been applied to Nordic neck-rings with hooked terminals. In the first gold hoard from Downpatrick, Co. Down, there is a fragment of a neck-ring with incised line and zig-zag ornament but the reconstruction is conjectural (Proudfoot 1955, 4, fig. 2, pl. 3). Eogan dates the hoard to his Middle Bronze Age Bishopsland phase (1964, 281-282) and compares a hoard of decorated neck-rings from Saint-Viatre, Loire-et-Cher (Picard 1961 338, fig. 46). The Carisbrooke Castle neck-ring is unusual, if not unique, but association with the twisted neck-ring and comparison with the Downpatrick fragment indicate a Middle Bronze Age date. Its manufacture should have been within the capacity of local bronze workers. There is no continental comparison close enough to justify Rowlands's conclusions that it was an import.

23. Birchington, Kent.

Rowlands 1976, 246 no. 82, pl. 10; Powell-Cotton and Crawford 1924. Powell-Cotton Museum, Birchington. Figs. 11, 12A.

Hoard, found in a pot. Palstave with cordiform inset and midrib pendant from stop-ridge, Fig. 11, 1. Palstave with long cordiform

inset and midrib, 2. Palstave with U-rib containing ribs with pendant midrib, 3. Palstave with shield-pattern containing broad ribs. 4. Palstave with inset bounded by V-rib, 5. Six palstaves with cordiform inset, 6-11. Two undecorated palstaves, 12-13. Narrow-bladed palstave with divided inset, 14. Pot, base missing; globular profile with low upright rim, deep groove below shoulder. Around the girth of the pot is a band of six irregular incised lines with a line of stamped double circles above and below. The surface is smoothed not burnished, Fig. 12A, 15.

The undecorated palstaves can be matched locally in the Near Canterbury hoard (24) 6, likewise those with cordiform insets, Near Canterbury, 2-3, which may also be compared with examples in the Burnham hoard (2) 14-16. The narrow-bladed palstave is similar to an example in the Gable Head hoard (12) 17, which has an undivided inset and narrower edge. The Birchington palstave does not have the straight sides and trapezoidal blade of the Norman type though of Heuqueville (60) 11. Smith (1959, 184 n. 6) considers that this is a transitional palstave but inset ornament is only common in MBA 2 and it need only be an unusually narrow British palstave of this phase.

The pot is unique in southern Britain (A. Ellison) and it is not a characteristic globular urn as Rowlands (1976, 216) implies.

24. Near Canterbury, Kent.

Rowlands 1976, 245-246 no. 81, pl. 8. Powell-Cotton Museum Birchington. Fig. 12B.

Hoard, "from a brickfield north of and near Canterbury". Rowlands gives the site as near the Barracks, Canterbury. Side-flanged palstave with midrib and two divergent ribs, Fig. 12B, 1. Palstave with cordiform inset, 2. Palstave with triangular inset, 3. Side-flanged palstave with midrib, 4. Palstave with psi-ornament, 5. Undecorated palstave, 6. Side-flanged palstave with inset and pendant rib, 7.

The palstave with psi-ornament has the convex flanges and well-defined ribs of an early shield pattern palstave. The undecorated palstave can be matched at Birchington (23) 13-14, likewise the palstaves with cordiform ornament, 6, 8-12, which may also be compared with examples in the Burnham hoard (2) 14-16. The side-flanged palstaves have narrower flanges and more pronounced crinoline-shaped blades than those common on the south coast.

25. Goudhurst, Kent.

Rowlands 1976, 247 no. 85, pl. 2; Franks 1855. BM. 55.3-10.1-3. Fig. 13A.

Hoard, originally eight palstaves, three preserved. Palstave with inset, Fig. 13A, 1. Side-flanged palstave with midrib, 2. Side-flanged palstave with trident, 3.

The palstave with inset ornament may be compared with an example in the Marshall Estate hoard (32) 14 and the form of its blade can be matched at Birchington (23) 6. The Goudhurst side-flanged palstaves resemble those in the south coast hoards more than those in the north Kent hoards.

26. Hollicondane, Ramsgate, Kent.

Rowlands 1976, 247 no. 87; Piggott 1949, 118-121; Inv. Arch. GB 48.

Inhumation burial. Two penannular bracelets, massive section, incised ornament. Inv. Arch. GB48, 1-2. Penannular bracelet with eleven longitudinal ribs, the central and peripheral ribs broader, plain terminals, 3.

Broad-ribbed bracelets occur in the Nordic area during MIII but there are no exact parallels for the Ramsgate example, Nordic bracelets usually have notched ribs and decorated terminals. Smith (1920, 52) compared the Ramsgate bracelet with examples from Jaeren, Rogaland, south-west Norway, published by Brøgger (1913) in the Montelius Festschrift, to which Smith also contributed. The Norwegian bracelet from Tjelta has plain terminals (Brøgger 1913, 102, fig. 13) and belongs to Randsborg's variant I, with equal sized ribs (1968, 62, n.204). Another Jaeren bracelet, from Anda, (Brøgger 1913, 98, fig. 1) belongs to Randsborg's variant II, with thicker peripheral ribs (1968, 62, n.205, n.206). These bracelets date from MIII. We have the considerable authority of Sprockhoff (1941, 82, Abb. 66, 8) for regarding all three Ramsgate bracelets as of Ilmenau origin. Broad, ribbed bracelets occur in the Ilmenau area, e.g. at Ratzlingen, Kr. Uelzen (Laux 1971, Taf. 66, 11, 12), but, like the Leitform example illustrated by Sprockhoff, these have ornamented terminals and their type is not confined to the Ilmenau area. The bracelets with traced ornament have similar ornament to the pair from Kent.

27. St. Lawrence's College, Ramsgate, Kent.

Rowlands 1976, 248 no. 88; Hawkes 1942, 26-29, figs. 1; 2, 1-3. Find in a pit. Pin with perforated swollen shaft, thick disc-head with knob, Hawkes 1942 fig. 2, 1. Pin with perforated swollen shaft, incised ornament, thick disc head, top slightly recessed, 2. Pin with perforated swollen shaft, incised ornament, thick disc-head with convex top, 3. Pot, convex profile with finger-tipped rim and band of finger-impressions round body; coarse, flint-tempered fabric. Ibid., fig. 1. Horse teeth, ox bones, mussel shells.

The pins belong to the Picardy group; the decorated examples bear ornament similar to that on the examples from the Thames at Wandsworth, the fragment from Layham and the two perforated pins in the Villers-sur-Authie hoard. The pot is a Deverel-Rimbury bucket urn (Barrett 1976, 290).

28. Hunstanton, Norfolk.

A. J. Lawson, B.A.R. 67, 1979.

Hoard. Cast twisted neck-ring with hooked terminals. Plain neck-ring with oval section and hooked terminals. Annular bracelet with flat oval section, false terminals and incised ornament.

Pin with expanded head with recessed top, concave neck with bands

of incised lines, swollen shaft with angular ribs, loop flanged above and below by bands of incised lines. Looped palstave with ill-defined side-flanges and broad midrib with double inset below stop-ridge. The loop on the pin relates it to the English examples from Plaitford and the R. Fowey (List 37, 1); the latter pin presumably had an inset for its amber setting; and to several French examples, including one in the Villers-sur-Authie hoard (67) 3. Angular ribs occur on a pin in a Middle Bronze Age context in the Baux-Sainte-Croix hoard (43) 9; angular ribs and inset head occur on a pin from Tumulus period burial 3, barrow 2, Haghof, Holnstein, Ldkr. Sulzbach-Rosenberg, Bavaria (Torbrügge 1959b, Taf. 79, 13). The Hunstanton pin may also be compared with the unlooped pin in the late MII burial at Regesbostel, Kr. Harburg, Lower Saxony (Laux 1976, 67 no. 362; Randsborg 1968, 46). The false terminals on the Hunstanton bracelet are unique in Britain; they occur on French bracelets in the Le Hanouard hoard (59) 26c and from Rougemontiers and Saint-Cyr-du-Vaudreuil (List 41, 20-21).

29. Norton Fitzwarren, Somerset.

Langmaid 1971.

Hoard, found in a hole cut in the face of a ditch outside the counter-scarp bank of the hillfort. Two south-western palstaves. Slender socketed axe. A pair of annular bracelets, massive section, incised ornament, bands of herring-bone divided into zones by bands of transverse lines. A pair of penannular bracelets, D-section, tapering terminals, incised ornament, bands of chevron divided into zones by bands of transverse lines. A pair of bracelets with fine longitudinal ribs. Undecorated bracelets with massive lozenge section. Bracelet with double peripheral ribs flanking a row of bosses, rolled terminals. The ribbed bracelets from South Lodge Camp and Monkswood (List 42, 6, 10) also have five ribs. The bracelet with the row of bosses can be matched in the West Buckland hoard (30). The bracelets with incised ornament share the multiple zig-zag motif with the Hampshire bracelets but otherwise their ornament is not close to that of other British bracelets.

30. West Buckland, Somerset.

Rowlands 1976, 260 no. 12; Sandford 1880.

Hoard. Twisted neck-ring with hooked terminals. Fragments of a bracelet with peripheral double ribs flanking a row of bosses, each boss apparently surrounded by a groove, transverse notches on the ribs. Double-looped palstave with V-groove. A "Celt" of uncertain type.

Sandford states specifically that the neck-ring was twisted and not cast (cf. Butler 1963a, 138 n.2). The bracelet is related to the ribbed type. The nature of the bossed ornament is uncertain; it might be ring-and-dot. The best comparison, however, appears to be one of the bracelets in the Norton Fitzwarren hoard (29) which has two peripheral ribs and a central line of hollow bosses, those on the West Buckland bracelet are solid. The V-groove on the palstave presumably imitates the broad conical rib common on British double-looped palstaves.

31. Hammer Farm, Billingshurst, Sussex.

Rowlands 1976, 262 no. 129, pl. 2; Honeywood 1877, 183. BM WG 1948-52. Fig. 13B.

Hoard. Side-flanged palstave with multiple short ribs in inset, faint midrib below, Fig. 13B, 1. Side-flanged palstave with inset containing rib, faint midrib below, 2. Side-flanged palstave with tapering midrib, 3. Side-flanged palstave with midrib, 4. Looped side-flanged palstave with midrib, 5.

The side-flanged palstaves resemble those in the Sussex coastal hoards; Billingshurst is inland in the Weald, though in the Arun valley.

32. Marshall Estate, Bognor, Sussex.

Rowlands 1976, 263 no. 131, pl. 57-58; Guernonprez 1925. Drawn while in Southsea Castle Museum for conservation. Fig. 14.

Hoard containing ninety pieces at least sixty palstaves, many fragmentary and corroded but often unfinished. Looped Norman palstave, Y-ornament, Fig. 14, 1. Looped Norman palstave, undecorated, 2. Norman palstave, trident ornament, 3. Norman palstave, tapering rib containing two insets, 4. Norman palstave, inset with midrib, 5. Norman palstave, faint inset and containing V-rib, 6. Side-flanged palstave with midrib, 7. Four similar. Looped side-flanged palstave with midrib, 8. Eleven similar palstaves. Palstave with tapering midrib, 9. Looped side-flanged palstave with faint U-rib with central rib, 10. Palstave with trident ornament, 11. One similar palstave. Palstave with double V-rib, 12. Palstave with long V-rib and short midrib, 13. Palstave with narrow inset, 14. Palstave with divided inset flanked by ribs, 15. Palstave with long divided inset flanked by V-ribs, 16. Palstave with broad inset, 17. Palstave with V-rib, 18. Palstave with multiple short ribs, 19.

The looped Norman palstaves may be compared with the examples in the hoards from La Chapelle (46) 3, Heuqueville (60) 1, Rouen (62) 5, Seine-Maritime, and Verneuil (64) 13, 15, and the unlooped Norman palstaves with Verneuil 10, Heuqueville 7, Bourlay (44) 1, 2, Livet (48) 7, and Sucy-en-Brie (68). Side-flanged palstaves with midrib are predominant in the Marshall Estate hoard as in the local coastal hoards from Near Bognor (33), Rustington (36) and Blackrock (34), and in the Billingshurst hoard (32). Rowlands recognized sixty-two separate palstaves, seventeen septum fragments, five blade fragments and nine undiagnostic fragments.

33. Near Bognor, Sussex.

Rowlands 1976, 264 no. 132, pl. 2; Evans 1881, 80. BM WG 1861-62, P 1969 10.1-4. Fig. 13C.

Hoard, found "in making the railway near Bognor". Two side-flanged palstaves with midrib, Fig. 13C, 1-2. Three side-flanged palstaves with multiple short ribs and midrib, 3-5. Another similar palstave. The side-flanged palstaves are characteristic of the Sussex coastal hoards.

34. Blackrock, Brighton, Sussex.

Rowlands 1976, 263 no. 130; Piggott 1949; Inv. Arch. GB47.
Brighton Museum. Fig. 15A.

Hoard. Double-edged blade with damaged butt containing two or three rivet-holes, broad midrib, Inv. Arch. GB47, 1. Cast hilt with pommel-pin in top, rounded shoulders contain two rivets; incised ornament on pin, grip and butt, 2. Two penannular bracelets, D-section with expanded contiguous terminals, 3-4. Spiral finger-ring with incised ornament, 5. Three Sussex loops, 6-8. Three side-flanged palstaves with midrib, 9-11. Two side-flanged palstaves with short ribs and midrib, 12-13. Three Norman palstaves, Fig. 15A, 1-3.

The Norman palstaves may be compared with examples in the hoards from La Chapelle (46) 13, Bourlay (44) 2, Bourneville (45) 3 and Heuqueville (60) 17. Side-flanged palstaves with midrib are predominant as in other Sussex coastal hoards. Bergmann (1970, Teil B, Liste 90) erroneously includes one of the Blackrock palstaves among a small group of north-west German palstaves. The metal hilt has been related to Nordic examples (Piggott 1949, 115-116) and these have recently been studied by Ottenjann (1969). Nordic swords have elaborate hilts, the base of their hilts usually being of omega form, not straight or concave. They usually bear more rivets than the two on the Blackrock hilt. Their ornament is usually more elaborate on shoulders, grip and pommel. The closest Nordic comparison is still the weapon from a MII find at Tarbeck, Holstein (Ottenjann 1969, 15, 82, Taf. 4, 18). This hilt has a flat base, two rivets on the shoulders but a third on the grip, and ladder ornament outlining the shoulders. The flat base is rare during MII but absent during MIII. The Blackrock hilt appears to be closer to Nordic examples than to central European or Atlantic solid hilts. Perhaps it is an insular imitation of a Nordic model. The blade belongs to Burgess' Group IV, blades with broad midribs (1968c, 14). Piggott compared the ring to examples from northern Germany. That from Grave 2, Barrow I, Slate, Kr. Parchim, Mecklenburg, has been illustrated by Schubart (1972, 153, Taf. 65, 81); it is spiral with transverse notching unlike the ornament on the Blackrock ring. From Lübz, Kr. Lütz, Mecklenburg, comes a ring similar to that from Slate (*ibid.*, 123-124, Taf. 110, 7-9). The two rings from Grave A, Barrow II, Friedrichsruhe, Kr. Parchim, Mecklenburg, are annular and have longitudinal ornament (*ibid.*, 96-97, 193. List 10). The expanded contiguous terminals of the bracelets can be matched in the Cambridge area hoard and in the hoard from Fort-Harrouard but all these bracelets are ornamented and the terminals are expanded only outwards. Better examples for comparison with the Blackrock bracelets occur in a probable hoard from La Pommeraié Chenambault, Maine-et-Loire; they have the same form and section. Associated objects are a fragment of another plain bracelet and an unlooped Breton palstave (Cordier and Gruet 1975, 284, fig. 68, 4-7). These French parallels seem more convincing than claims for a German origin.

35. Hanley Cross Barrow, between Brighton and Lewes, **Sussex**.

Rowlands 1976, 267 no. 142; Burgess 1976b, 90 no. 25; Curwen 1954, 214 no. 8, fig. 62; Dixon 1849, 265-260, pl. facing p. 260, 1-3.

Possibly associated with an inhumation burial. Two Sussex loops.

Quoit-headed pin. Pin with disc-head bearing central knob, perforation in shaft protected by lozenge-shaped plate.

The disc-headed pin forms a group with the examples from Lakenheath, Ingelton and Dorchester (List 38, 1-2, 5).

36. Rustington, **Sussex**.

Rowlands 1976, 268 no. 147, pl. 8; Barton 1963, 25; Wilson n.d., 5, 9. Worthing Museum. Fig. 16A.

Hoard, originally seven palstaves, six survive. Four side-flanged palstaves with midrib, Fig. 16A, 1-4. Looped side-flanged palstave with midrib, 5. Looped palstave with midrib, 6.

Side-flanged palstaves with midrib predominate as in all the Sussex coastal hoards.

37. Sidlesham, **Sussex**.

Rowlands 1976, 269 no. 148, pl. 8. Brighton Museum, previously in Chichester Museum. Fig. 15B.

Hoard, records from Chichester Museum indicate association.

Flanged axe, Fig. 15B, 1. Two Breton palstaves with midrib, 2-3.

Breton palstave, undecorated, 4. Palstave with ribs in septum, very corroded, 5. Palstave with inset and midrib pendant from stop-ridge corroded, 6. Looped socketed axe with collar, single moulding, three short ribs, 7. Looped socketed axe, faceted, octagonal section, ribs on face angles, 8.

The flanged axe has been attributed to the Médoc type (Rowlands 1976, 26), but it lacks the wedge-shaped profile (Briard and Verron 1976a, 49-52, figs. 1-3) and resembles the more widespread Atlantic type (*ibid.*, 45, fig. 1). The faceted axe is a typological predecessor of the linear-faceted type.

38. Highworth, **Wilts**.

Rowlands 1976, 272 no. 156, pl. 12; Passmore 1905-06, 310, fig. Ash. 1927.136.144. Fig. 16B.

Hoard. Side-flanged palstave with inset and midrib pendant from stop-ridge, Fig. 16B, 1. Unlooped socketed axe with slender blade and plain collar, 2.

39. Stanton St. Bernard, **Wilts**.

Rowlands 1976, 272 no. 158, pl. 5; Moore and Rowlands 1972, 54-55, pl. IX, 33-35.

Hoard. Isle of Wight palstave, Moore and Rowlands 1972, pl. IX, 33. Looped palstave with V-rib and central rib, 34. Palstave with cordiform inset, 35.

40. Steeple Langford, Wilts.

Rowlands 1976, 272 no. 157; Moore and Rowlands 1972, 55, pl. IX, 36-37.

Hoard. Isle of Wight palstave, Moore and Rowlands 1972, pl. IX, 36. Looped socketed axe with slender blade, 37.

41. Penrose, Helston, Cornwall.

Rowlands 1976, 228 no. 18; Thomas 1964; Smith 1919-20. Royal Institute of Cornwall, Truro; Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection. 2T.36. Fig. 16C.

Hoard, probably of three penannular bracelets, two in Truro and one in Salisbury. Penannular bracelet, D-section with flat terminals, broader than the body of the bracelet. Along the body run three ribs, two peripheral and one central, with a triangle of ribs at either end of the central rib; beyond are oblique ribs and grooves, assymmetrical in one case. The terminals bear two transverse ribs with two grooved ring-and-dot motifs in between. These ribs and grooves appear to be moulded. All the ribs bear double lines of punched ornament, apparently done with a crescentic point; these lines often overlap, Fig. 16C, 1. Penannular bracelet. A drawing kindly provided by Miss S. M. Pearce of Exeter Museum shows that this is almost identical to the Salisbury bracelet, Truro. Penannular bracelet.

Corroded but similar to the other two, Truro.

Thomas suggests that four palstaves and a socketed axe belong with these bracelets but there is little evidence for this. The relationship with ribbed bracelets cited by Thomas is superficial; neither does the ornament on the Helston bracelets resemble that on British Middle Bronze Age decorated bracelets. A Dutch find is relevant. J. J. Butler has kindly provided a drawing of a bracelet from the Daarleveen, gem. Hellendoorn, Overijssel, RMOL d.1909. 10.1. It is of similar form and appears to exhibit the same techniques of ornament with central and peripheral ribs as well as transverse ribs on the terminals. This bracelet could well be from the same workshop as the Cornish hoard. The date of these bracelets is uncertain. In Britain, massive bracelets of bronze bearing complex decoration are only common during the Middle Bronze Age. One later find may be considered, the decorated gold bracelet from Walderslade, Kent (Longworth 1966-67 fig. 2, pl. XLIV). This has ring-and-dot and longitudinal ornament. Dutch Late Bronze Age bracelets of omega and related forms are the best local comparisons for the Daarleveen bracelet but these have different ornamental motifs.

The small annular bracelet from Pembroke House, Passage West, Co. Cork, has longitudinal lines of dots and multiple concentric rings bounded by bands of transverse lines (Anon. 1928). This seems related to the Helston and Daarleveen ornament but the Irish bracelet has a hollow section.

NORTH-EASTERN FRANCE

42. Dommiers, Aisne.

Lobjois 1973. Drawings after J. J. Butler, Fig. 17A.

Hoard, originally twelve palstaves, nine preserved. Palstave with V-ornament, Fig. 17A, 1. Palstave with inset bounded by rib containing ribs, ridged blade, 2. Three palstaves with inset bounded by rib, midrib, 3-5. Palstave with inset containing rib, ridged blade, 6. Palstave with inset bounded by rib, containing ribs, midrib, ribs in septum, 7. Palstave blade with inset, 8. Palstave septum, 9.

The broad blade and V-ornament of Dommiers 1 can be matched by an unprovenanced palstave in Beauvais Museum (Blanchet and Lambot 1975, 51 no. 43). The crinoline-shaped blade with inset ornament, 8, is similar to the palstave from Hesdin, Pas-de-Calais (Gaucher and Mohen 1974, ill.19a), and to a palstave in the Near Canterbury hoard (24) 2. These two Dommiers palstaves are similar in form and dimensions to certain Oise examples, e.g. Forest of Compiègne and Morienval (Blanchet and Lambot 1975, 30-31, nos. 3, 5). The other Dommiers palstaves are closer in size and form to the palstaves in the Bernay hoard (66) than to the Norman type; they are larger and broader than most Norman palstaves and have wider flanges. A similar Oise palstave comes from the Forest of Compiègne, near Saint-Nicolas (*ibid.*, 31 no. 4).

43. Baux-Sainte-Croix, Eure.

Musée Municipal, Evreux, 3540-3551. Fig. 18.

Hoard. Looped Norman palstave, double inset in tapering rib, Fig. 18, 1. Looped Norman palstave, ridged blade, 2. Norman palstave, triangular inset, 3. Norman palstave, double inset, 4. Norman palstave, V-rib, inset, midrib, 5. Norman palstave, double inset in tapering rib, 6. Norman palstave, V-rib containing pellet, 7. Norman palstave, multiple short ribs, 8. Pegged spearhead, tip broken off, ogival blade with bevelled edges, ridged socket, 11. Pegged spearhead, socket broken off, ogival blade, ridged socket, 12. Pin, thickened head with multiple ribs, 10. Pin, lower part broken off, swollen shaft with angular ribs, some notched, expanded head with two ribs, 9.

The short rib ornament, 8, is not common on Norman palstaves, though it occurs on La Chapelle (46) 11; it is present on the four broad-bladed palstaves in the Mont-Saint-Aignan hoard. The spearheads belong to the group of ogival-bladed spearheads of north-eastern France. The complete pin, 10, belongs to the type with long ribbed head. The broken pin, 9, is presumably the example which Verron (1976a, 590) considers to be close to the collared type and Kubach (1977, 328 n.33) also compares it with early Urnfield pins. Comparison may also be made with late Tumulus pins, such as the example in the burial from Kösching, Ldkr. Ingolstadt, Bavaria (Inv. Arch. D17, 3); this has angular ribs, some notched, like the Baux-Sainte-Croix pin. A late Tumulus date for these pins is established by the occurrence of one in barrow E, Asenkofen,

Kr. Freising, Bavaria (Schauer 1971, Taf. 137B, 4), the eponymous find for Reinecke C2 in Bavaria (*ibid.*, 106). Other contemporary examples occur in Bavaria (Torbrügge 1959a, 43, Abb. 12 4-5) and in Württemberg (Ziegert 1963, 11, Taf. 3). Similar pins constitute the Hammer group (Randsborg 1968, 44 n.128-129) named after the controversial late Tumulus sword from Hammer, Nuremberg, Bavaria (Schauer 1971, 113-114, Taf. 137A); they are found in central and northern Europe and the Haguenau Forest. Pins with notched rounded ribs occur in north-western Germany during late MII and early MIII (Laux 1971, 55; 1976, 67-68 no. 357-362; *Inv. Arch.* D157, 2). The Baux-Sainte-Croix pin need not be given an Urnfield date but we may agree with Verron (1976a, 590) in placing this hoard late in Bronze Moyen.

44. Bourlay Morin, Evreux, Eure.

Musée Municipal, Evreux, 3471-3479. Fig. 19A.

Hoard. Norman palstave, divided inset, Fig. 19A, 1. Norman palstave, inset with pendant midrib, 2. Norman palstave, triangular inset containing ribs, 3. Norman palstave, triangular inset containing pellet, 4. Norman palstave, V-rib containing two pellets, 5. Norman palstave, divided inset, 6. Norman palstave, cordiform inset, 7. Norman palstave, trident ornament, 8. Norman palstave, triangular inset containing rib, thick midrib, 9.

45. Bourneville, Eure.

BM WG 200-203. Fig. 17B.

Hoard. Norman palstave, triangular inset, Fig. 17B, 1. Norman palstave, divided cordiform inset, 2. Norman palstave, divided triangular inset, 3. Norman palstave, trident ornament, 4.

46. La Chapelle-du-Bois-des-Faulx, Eure.

Verron 1975a; 1976a, fig. 2, 7-16. Musée Municipal, Louviers. Figs. 19B, 20

Hoard. Looped Norman palstave with midrib, Fig. 19B, 1. Looped Norman palstave, trident ornament with additional V-rib, 2. One similar palstave. Looped Norman palstave, Y-ornament, 3. Looped Norman palstave, broad blade, trident ornament, 4. Looped Norman palstave, trident ornament, 5. Three similar palstaves. Norman palstave, divided triangular inset, Fig. 20, 6. Norman palstave, inset ornament, 7. Norman palstave, divided long inset, 8. Norman palstave, semi-circular inset bounded by U-rib, pendant midrib, 9. Norman palstave, inset bounded by rib, 10. Norman palstave, multiple short ribs, 11. Norman palstave, Y-ornament, 12. Norman palstave, cordiform inset divided by long midrib, 13. One similar palstave with narrower blade. Norman palstave, trident ornament, 14. Two similar palstaves. Norman palstave, inset, long midrib flanked by grooves and shorter ribs, 15. Two similar palstaves. Norman palstave, triangular inset bounded by rib, 17. Two Norman

palstaves, psi-ornament, 18-19. One similar palstave. Side-flanged palstave with midrib, 16.

The palstaves have been analysed and all contain less than 1% lead except 5 which contains 3.5% (Verron 1975c, 57). One palstave with broad blade and convex flanges (*ibid.*, no. 29; 1976c, fig. 2, 7) is identified as a Tréboul palstave (1975c, 58). The side-flanged palstave, 16, is unusual in Normandy and more slender than the side-flanged palstaves from the Somme valley; its dimensions can be matched by a side-flanged palstave with midrib in the Near Canterbury hoard (24) 7. The occurrence of this palstave correlates the La Chapelle hoard with the British sequence.

47. Gisors area, Eure.

Musée Municipal, Evreux, 3506-3512. Fig. 21A.

Hoard. Broad-bladed palstave with triangular inset, Fig. 21A, 1. Norman palstave with inset containing rib, 2. Norman palstave with divided inset and faint midrib, 3. Norman palstave with trident and double inset, 4. Norman palstave with cordiform inset, 5. Norman palstave with triangular inset bounded by rib and containing rib, 6. Norman palstave with divided inset, 7. Small palstave with U-rib, 8.

The broad-bladed palstave may be compared with several British palstaves with inset ornament and narrow flanges: Burnham (2) 15, 16; Birchington (23) 9 and Marshall Estate (32) 14.

48. Livet-sur-Pont-Authou, Eure.

Musée Municipal, Evreux, 3446-3456. Fig. 23A.

Hoard. Looped Norman palstave, V-rib, ridged blade, Fig. 23A, 1. Looped Norman palstave, double V-groove, 2. Norman palstave, cordiform inset, 3. Norman palstave, divided triangular inset, 4. Norman palstave, triangular inset containing rib, 5. One similar palstave. Norman palstave, W-rib with two insets, 6. One similar palstave. Norman palstave, inset containing two indistinct ribs, 7. Norman palstave, V-groove, 8. Norman palstave, Y-ornament, 9.

49. Longchamps, Eure.

Coutil 1925.

Hoard. Broad-bladed palstave, apparently side-flanged with vertical ribs and grooves, Coutil 1925, 1. Norman palstave, trident ornament with transverse ribs, 3. Narrow-bladed palstave, 2. A pair of massive annular bracelets, incised ornament, composed of lines and transverse strokes, pointed ovals separated by bands of lines, 6. Massive annular bracelet, incised ornament composed of lines and pointillé, apposed semi-circles and bands of lines, 5. Massive annular bracelet, incised ornament composed of lines and pointillé, pointed ovals separated by bands of lines, 4.

Coutil states explicitly that the line ornament was produced by, la gravure au burin, and the pointillé by, le ciselet (1925, 194). The Norman palstave can be matched in the Carimel hoard, Côtes-du-Nord (Briard 1966b,

fig. 2, 1), and this hoard also contains a side-flanged palstave with midrib ornament (*ibid.*, fig. 2, 3). The broad-bladed Longchamps palstave may be compared with those in the Mont-Saint-Aignan hoard (61) 1-4 which also bear ribs and grooves.

50. Forêt de Bords, near Louviers, Eure.

Verron 1976a, fig. 2, 5-6.

Probable hoard. Flanged axe with arched butt and expanded blade.

Shield-pattern palstave with midrib pendant from stop-ridge.

The flanged axe is probably related to the Arreton type; like the Muids hoard, this association shows that shield-pattern palstaves and flanged axes of Early Bronze Age form were in use at the same time in Upper Normandy (Briard and Verron 1976a, 85).

51. Muids, Eure.

Verron 1971, 15 no. 12, figs. 12a-d; 1976a, 587; Coutil 1921, pl. 2, fig. 25.

Hoard. Flanged axe, slight stop-ridge, expanded blade, Verron 1971, fig. 12. Flanged axe, slight stop-ridge, marked by incised ornament, expanded blade, 12b. Flanged axe, trapezoidal form, expanded blade, 12c. Flanged axe, flanges only present on upper part, 12d. Two other flanged axes. Shield-pattern palstave with shallow stop-ridge, lateral projections and midrib on blade, Coutil 1921 pl. 2, fig. 25.

Flanged axe 12d may be related to the British haft-flanged type (Smith 1959, 171-173, fig. 6, 1-4, Map 4a); related axes in Normandy have a shouldered profile (Briard and Verron 1976a, 67-68, fig. 3). The first two flanged axes, 12a-b, belong to a group of the French Atlantic type related to the British Arreton type (*ibid.*, 46). The form of the palstave is typologically early, its lateral projections suggest derivation from the local haft-flanged axe form (*ibid.*, 85). The Muids hoard is important for its demonstration of the early appearance of shield-pattern palstaves in Normandy (Verron 1976a, 587) associated with flanged axes and haches à talon naissant (Briard and Verron 1976a, 80-81).

52. Ville-d'Avray, Hauts-de-Seine.

Gaucher 1973, 223-227, figs. 6B-7.

Hoard. Breton palstave, undecorated, Gaucher 1973, fig. 6B, 1.

Breton palstave, narrow midrib, 2. Breton palstave, short midrib, facet on blade, Fig. 7, 3. Three Breton palstaves, side-flanged, midrib, 4-6. Norman palstave, V-groove, double inset, 7. Blade of Breton palstave, with midrib, 8. Flanged axe, 9. Pegged spear-head with broken blade, 10. Two massive penannular bracelets with irregular quadrilateral section, 11-12. Massive penannular bracelet D-section, 13.

The palstaves are identified by Briard and Verron (1976a, 104). Side-flanges are not common on Breton palstaves but occur in the hoards from La Jossais, Loire-Atlantique (Briard 1966b, fig. 4, 1, 4-6), Carimel

(*ibid.*, fig. 3, 4) and Portrieux (Briard 1965, fig. 38, 5), Côtes-du-Nord, and on isolated palstaves from Vitré, Ille-et-Vilaine (*ibid.*, fig. 36, 7), and Auray, Morbihan (*ibid.*, fig. 37, 1). The flanged axe is residual; it resembles the Auvernier type of Reinecke A2, mainly found in western Switzerland and south-eastern France (Abels 1972, 73-75), though Gaucher illustrates it as a characteristic type of his Middle Bronze Age Chéry group (1976, fig. 2, 1).

53. Cambrai area, Nord.

Mohen 1972, 452-454, fig. 5.

Hoard. Flanged axe with arched butt and expanded blade, Mohen 1972, fig. 5, 1. Shield-pattern palstave, 2. Narrow-bladed palstave with curved stop-ridge and short midrib, 3. Seven Armorican socketed axes, 4-10.

The flanged axe belongs to the Arreton group of the French Atlantic type. Mohen identifies the second palstave as Breton but the curved stop-ridge and expanded blade are more characteristic of the looped Norman type. These axes are all residual.

54. Sous la Saulx, Bailleul-sur-Thérain, Oise.

Blanchet and Lambot 1975, 55-57, nos. 55-59.

Hoard, found in a pit within a ring ditch, originally seven flanged axes. Four flanged axes, arched butt, slight stop-ridge, Solid-hilted rapier, lower part of blade broken off. The hilt has flat pommel with three bosses on the upper part of the grip, convex shoulders with three rivets, notched base. The blade has a tapering midrib flanked by multiple grooves.

The axes belong to the Arreton group of the French Atlantic type of flanged axe (see p. 40). The blade form of the sword relates it to the Treboul-Saint-Brandan group and the association with the axes confirms the early origin of these swords, at the beginning of Bronze Moyen in France, probably equivalent to the later part of the Early Bronze Age in southern Britain.

55. La Hérelle, Oise.

Blanchet and Lambot 1975, 59 nos. 62-63. (the measurements on p. 60 presumably refer to these palstaves).

Hoard, originally at least five palstaves, two preserved. Looped Norman palstave, trident ornament. Norman palstave with trident ornament.

56. Desvres, Pas-de-Calais.

Coffyn 1969, 108-109, figs, 8, 2-8; 9, 5; Gaucher and Mohen 1974, 113, Desvres 1.

The association of this group of objects, now in the Musée du Périgord, Périgeux, is uncertain. Médoc flanged axe, Coffyn 1969, fig. 8, 2. Breton palstave, fig. 9, 5. Three annular rings fig. 8, 6-8. Two penannular bracelets, fig. 8, 3, 5. Pin with slightly expanded head, fig. 8, 4.

The same museum contains another Médoc axe from north-eastern France with the provenance, Pierrefonds, Oise (Coffyn 1969, 109, fig. 81). Associations of Médoc flanged axes and Breton palstaves are known in central France in the Teillet-Argenty hoard, Allier (Abauzit 1967, 342-345, figs. 2; 3A), and in Brittany in the Portrieux hoard, Côtes-du-Nord (Briard 1965, 116, fig. 38, 4-6). Outside central and western France, finds of true Médoc axes are rare (Coffyn and Mohen 1968, 760-763; Briard and Verron 1976a, 49-52); the type enjoyed a long period of currency during the Bronze Age and many examples were dispersed during the 19th century (*ibid.*).

57. Vaudricourt, Pas-de-Calais.

Mohen 1972, 446, fig. 1, 7-13; Gaucher and Mohen 1974, 119, Vaudricourt.

Possible hoard. Pegged spearhead, socket broken off, Mohen 1972, Fig. 1, 7. Pegged spearhead, 8. Spearhead blade, 9. Sword or rapier blade with midrib, 10. Tanged blade, 11. Palstave blade, 12. Stop-ridge axe, 13.

Neither the date nor the nature of this find is certain.

58. Roumare Forest, Canteleu, Biessard, Seine-Maritime.

Verron 1971, 59 no. 29; Deglatigny 1924, 34-35, pl. X.

Hoard, originally a dozen palstaves, seven survive. Looped Norman palstave, Verron 1971, fig. 29. Broad-bladed palstave, midrib flanked by broad grooves, *Ibid.* Breton palstave, Deglatigny 1924, pl. X. Palstave with trident ornament, *Ibid.* Palstave blade, *Ibid.* Norman palstave, blade broken, *Ibid.* Blade of Norman palstave, V-rib with central rib, *Ibid.*

59. Le Hanouard, Seine-Maritime.

Verron 1971, 57 no. 26; Coutil 1921, 806, pl. 6.

Hoard, originally twenty palstaves and five bracelets. Norman palstave, double inset, Verron 1971, fig. 26a. Narrow-bladed palstave with inset, fig. 26b. Annular bracelet with false terminals, incised ornament, line, pointillé and cross hatching, opposed curves of line and pointillé and longitudinal lines divided into zone by transverse bands, fig. 26c. Penannular bracelet, incised ornament, similar motifs, Coutil 1921, pl. 6.

60. Heuqueville, Seine-Maritime.

Verron 1971, 61-63 no. 37; Dubus 1912, 103, pl. I-II. Musée Départemental des Antiquités de la Seine-Maritime, Rouen. 2534.1-42. Figs. 21B, 22.

Hoard, Looped Norman palstave, undecorated, Fig. 21B, 1. Two similar palstaves. Looped Norman palstave, trident ornament, 2. One similar palstave. Looped Norman palstave, inset with short midrib, 3. One similar palstave. Breton palstave, 4. Norman palstave, undecorated, Fig. 22, 5. Three similar palstaves.

Norman palstave with indistinct inset, long midrib, 6. Norman palstave with inset, long midrib, 7. Four similar palstaves. Norman palstave with triangular inset bounded by rib, long midrib, 8. Norman palstave, trident ornament, 9. Eight similar palstaves. Norman palstave, divided inset, 10. Three similar palstaves. Two Norman palstaves with inset, 11-12. Norman palstave with raised facet and midrib, 13. One similar palstave. Norman palstave with V-rib, 14. Norman palstave with V-groove, 15. Norman palstave with divided inset bounded by V-rib, 16. Norman palstave with inset and short midrib, 17. Norman palstave with multiple short ribs, 18.

The Breton palstave does not have the characteristic straight stop-ridge but the broad septum and convex flanges indicate that it is not a Norman palstave; it may be compared with a miscast example from Trois-Croix, Rennes, Ille-et-Vilaine (Briard 1970b, 19, fig. 1, 5). One of the Breton palstaves in the Malassis hoard, Cher, has a curved stop-ridge (Briard, Cordier and Gaucher 1969, fig. 5, 1).

61. Mont-Saint-Aignan, Rouen, Seine-Maritime.

Verron 1971, 47-49 no. 8; Deglatigny 1919-20. Musée Départemental des Antiquités de la Seine Maritime, Rouen. 2503-2512. Fig. 24.

Hoard. Four broad-bladed palstaves with irregular rib and groove ornament, Fig. 24, 1-4. Norman palstave, inset bounded by rib, 5. Norman palstave, divided inset, 6. Norman palstave, inset bounded by rib, midrib, 7. Norman palstave, indistinct inset, pendant midrib, 8. Rapier, damaged hilt with two broken notches; lozenge blade section with offset edges, 9. Rapier, solid hilt attached by four rivets; flat oval pommel, slightly concave grip, convex, drooping shoulders, slight notch in base, incised ornament, bands of triangles on grip, bands of transverse lines on shoulders, 10.

The ornament on the broad-bladed palstaves occurs on Norman palstaves in the hoards from La Chapelle (46) 11 and Baux-Sainte-Croix (43) 8 and on a palstave in the Bernay-Ponthoile hoard (66) 36. The ornament on the hilt of the rapier is unusual on Tréboul-Saint-Brandan swords (Briard and Mohen 1976, 31, 34, fig. 2, 2), but occurs on Tréboul spearheads (Briard 1965, 86, fig. 25, 5-6). Burgess includes both Mont-Saint-Aignan blades in his Group III with triple arris (1968c, 13) but they do not have this section. Their lozenge sections with offset edges relate them to central European Reinecke B swords of Beringen and Grossenstingen types (Schauer 1972c, 24; 1971, 45-48) though this section also occurs on later Nehren swords (*ibid.*, 48-51). These swords have broad, slightly trapezoidal hilts with two rivets and two rivet notches; their hilt marks are concave or triple U-shaped. The two small lateral rivets in the Mont-Saint-Aignan solid hilt relate it to these central European weapons; the other blade is too damaged to enable the presence or absence of such notches to be ascertained. The proportions of our weapons, narrow blades and broad hilts, relate them to Atlantic trapeze-hilt rapiers (Briard and Mohen 1976, 34). The date of the Mont-Saint-Aignan solid hilted sword should be within, or soon after, Reinecke B. I cannot accept the comparison of Mont-Saint-Aignan palstaves with shield-pattern palstaves in the Habsheim hoard (Hundt 1962, 52; Schauer 1972c,

23-24). The broad-bladed palstaves are unusual, probably local not British, and typologically early in the north-western French series. Their relationship with Somme palstaves is uncertain. Verron is surely right to place the Mont-Saint-Aignan hoard early in Bronze Moyen (1976a, 588, 590).

62. Rouen, Seine-Maritime.

MAN. 629, 631, 633, 636, 638. Fig. 23B.

Possible hoard. Norman palstave, inset ornament, Fig. 23B, 1. Norman palstave, double V-groove, 2. Looped Norman palstave, trident ornament, 3. Looped Norman palstave, divided triangular inset, 4. Looped Norman palstave, Y-ornament, 5.

63. Fay-lès-Nemours, Seine-et-Marne.

Gaucher 1973, 217-218, fig. 3B.

Hoard, originally eight or ten palstaves, one survives. Norman palstave, midrib ornament.

64. Verneiul-l'Etang, Seine-et-Marne.

Gaucher 1973, 221-223, figs. 4, 5A.

Hoard, original number of palstaves uncertain, figures of thirty-five and fifty-eight have been recorded. Six palstaves are preserved, with adequate illustrations of another nine. Breton palstave, Gaucher 1973, fig. 4, 4. Looped Norman palstave, undecorated, fig. 5A, 13. Looped Norman palstave, triangular inset, fig. 5A, 14. Looped Norman palstave, Y-ornament, fig. 5A, 15. Norman palstave, undecorated, fig. 4, 2. Two Norman palstaves, inset, fig. 4, 5-6. Three Norman palstaves, divided inset, fig. 4, 7; fig. 5A 11-12. Norman palstave, divided inset, long midrib, fig. 4, 8. Norman palstave, midrib, fig. 4, 9. Norman palstave, trident ornament, fig. 5A, 10. Plain palstave, fig. 4, 1. Broad-bladed palstave with thick midrib, fig. 4, 3.

65. Amiens Museum, Somme.

Gaucher and Mohen 1974, 108, Amiens Musée 1-4; Breuil 1905, figs. 2, 15; 3, 24, 26, 28.

Possible hoard, said to have been found during construction of the railway from Amiens to Boulogne. Side-flanged palstave with midrib, Breuil 1905, fig. 2, 15. Palstave with blade shortened by resharpening, cordiform inset, fig. 3, 24. Broad-bladed palstave with double U-rib ornament, 26. Broad-bladed palstave with psi-ornament, 28.

The resharpened blade renders attribution of 24 to a particular type uncertain. The other three palstaves are related to the Bernay-Pointhoile hoard (66) by their broad blades; psi-ornament and side-flanges with midrib occur on palstaves in this hoard while double U-rib ornament occurs on a broad bladed palstave from Amiens (Fig. 27, 3).

66. Bernay-Ponthoile, Somme.

Gaucher and Mohen 1974, 38, 110 Bernay-en-Ponthieul, 118 Ponthoile 2, ill.20; Breuill 1905, 151-155. Ash. 1927. 2124-2135 (Bernay).
Fig. 25.

Usually recorded as two separate finds, this was probably a single hoard (J.-Cl. Blanchet). Twelve palstaves with the provenance Bernay are preserved in the Ashmolean Museum, Oxford, and about half the fifty-four palstaves with the provenance Ponthoile are preserved in Abbeville; five of these are illustrated by Gaucher and Mohen (1974, ill.20) with the caption Bernay. Palstave with small shield-pattern containing ribs, Fig. 25, 1. Palstave with small shield-pattern, 2. Palstave with small shield-pattern containing V-ribs, 3. Palstave with inset, 4. Palstave with psi-ornament, 5. Palstave with trident containing V-rib, 6. Two palstaves with Y-ornament, 7-8. Palstave with triangular inset containing rib, indistinct midrib, 9. Palstave with midrib, 10. Two side-flanged palstaves, short midrib, 11-12. Breton palstave, Breuil 1905, fig. 3, 33. Palstave with U-rib, 20. Palstave with Y-ornament, 27. Palstave with psi-ornament, 29. Palstave with double inset, 30. Palstave with multiple ribs, 36. Narrow bladed palstave with multiple ribs, 35. Side-flanged palstave with short ribs, fig. 2, 13. Side-flanged palstave with short midrib, 16. 35 and 36 are included by Gaucher and Mohen (1974, ill.20, upper centre and left) but the other three palstaves in this illustration: side-flanged palstave with midrib, palstave with psi-ornament, palstave with Y-ornament, cannot confidently be identified from Breuil's published drawings.

Ten of the palstaves in Oxford have been analysed by optical spectrometry and all contain less than 1% of lead (Brown and Blin-Stoyle 1959, 201-202 nos. 57-59, 63-69). Palstave 30, with double inset, may be Norman but its attribution is uncertain (Gaucher and Mohen 1974, 118, Ponthoile 3). The narrow-bladed palstave, 35, is an unusual form. Apart from the Breton palstave, all the other axes belong to the Somme-Oise-Aisne group of broad-bladed palstaves. Side-flanged palstaves with midribs occur in several hoards in south-eastern England: Near Bognor (33) 1-2, Rustington (36), Billingshurst (31) 2-5, Blackrock (34) 9-13, Marshall Estate (32) 7-8, Sussex, and Goudhurst (25) 2, Kent, with multiple short ribs at Billingshurst (31) 1 and Near Bognor (33) 3-5; there is a palstave with psi-ornament in the Near Canterbury hoard (24) 6, Kent.

67. Villers-sur-Authie, Somme.

Gaucher and Mohen 1974, 40-42, 119 Villers-sur-Authie, ill.21; Breuil 1918-19.

Hoard, now lost. Twisted neck-ring, hooked terminals, Breuil 1918-19, fig. 2, 3. Two coiled finger-rings, 4-5. Two cylinders with disc terminals, 1-2. Pin with small disc-head, perforated swollen shaft bearing incised ornament, fig. 3, 1. Pin with small knobbed disc-head, perforated swollen shaft bearing incised ornament, 2. Pin with small knobbed disc-head, looped swollen shaft bearing

incised ornament, 3. Two small dagger blades with two rivet holes, 4-5. Five annular bracelets, massive section, geometric incised ornament, fig. 4, 1-5. Annular bracelet, massive section, incised ornament, line and pointillé, opposed curves separated by transverse bands, 6. Two annular bracelets, massive section, incised ornament line and pointillé, opposed curves separated by transverse bands, fig. 5, 1-2. Annular bracelet, massive section, incised ornament oblique lines and pointed ovals, 3. Penannular bracelet, overlapping terminals, massive section, incised ornament, oblique lines, 4. Annular bracelet, massive section, deep notch, undecorated, 5. Penannular bracelet, massive section, undecorated, 6.

The pins belong to the Picardy group; like them the daggers probably represent Haguenau influence. The decorated bracelets show the variety of motifs employed during Bronze Moyen. The simple coiled finger-rings are related to contemporary British examples; so, presumably, is the neck-ring, though it may have been twisted rather than cast. The nature of the small cylinders is uncertain.

68. Sucy-en-Brie, Val-de-Marne.

Mohen 1968, 783-791; Nicolardot and Gaucher 1975, 131, fig. 2.

Hoard, originally twenty-two axes, two spearheads, one dagger and one chisel, eleven palstaves, one spearhead and the dagger are preserved in the Musée de l'Armée, Paris, and the chisel in the MAN. Palstave with triple converging ribs, Mohen 1968, B 1a. Palstave with multiple ribs, b. Palstave with trident ornament, c. Palstave, with double inset, d. Undecorated palstave, e. Palstave with divided cordiform inset, f. Palstave with cordiform inset, g. Palstave with divided cordiform inset, h. Palstave with inset, i. Palstave with divided inset containing ribs, j. Palstave with cordiform inset containing pellet, k. Spearhead with ogival blade, socket broken, B81. Small dagger with four rivets, B59. Chisel with long tang and spatulate blade, Nicolardot and Gaucher 1975, 131, fig. 2.

The two largest palstaves, d and e, may be related to the Somme-Oise-Aisne group, the others are related to the Norman type. The spearhead belongs to the group of ogival bladed spearheads of Bronze Moyen in north-eastern France. The dagger is of Haguenau origin. The chisel is a unique form. The spearhead does not demand a Bronze Final I date as Mohen suggests (1968, 789).

69. Aubergenville, Yvelines.

Gaucher 1973, 211, fig. 1B

Hoard, originally a score of palstaves, two survive. Norman palstave, double inset, Gaucher 1973, fig. 1B, 1. Looped Norman palstave, trident ornament, 2.

70. Blaru, Yvelines.

Gaucher 1973, 211-215, fig. 2A.

Hoard originally five palstaves, three survive. Looped

Norman palstave with four small insets forming arc, Gaucher 1973, fig. 2A, 1. Norman palstave with inset and long midrib flanked by two short ribs, 2. Norman palstave, undecorated, 3.

71. Chambourcy, Yvelines.

Gaucher 1973, 215, figs. 2B; 3A.

Probable hoard, eight palstaves preserved. Norman palstave, cordiform inset, Gaucher 1973, fig. 2B, 1. Norman palstave, double inset, 2. Norman palstave, triple inset, 3. Two Norman palstaves, divided inset bounded by V-rib, fig. 3A, 4-5. Norman palstave, oblique rib flanked by grooves, 6. Norman palstave, Y-ornament, 7. Norman palstave, trident ornament, distorted, 8.

72. La Queue-les-Yvelines, Yvelines.

Gaucher 1973, 219-220, figs 5B.

Hoard, originally thirteen palstaves, one preserved. Looped Norman palstave, trident ornament with double inset.

NETHERLANDS

73. Alphen, N. Brabant.

Beex 1964; Butler 1964b.

Ringwalheuvel, central cremation with flanged axe, butt broken off, bands of transverse lines on the flanges.

The original form of the axe is uncertain but it is probably of Tumulus origin, early rather than late. Ornament is very rare on the Tumulus flanged axes illustrated by Abels (1972) but it occurs on the axe in the Hausberge hoard (90), which appears to be most relevant to the chronology of the Alphen axe, giving a late MI/Reinecke B date for the axe and probably for the barrow.

74. 'Vijfberg', Rechte Heide, Goirle, N. Brabant.

Glasbergen 1954b, 63, 65 no. 4, fig. 54.

Barrow VI, two phase barrow. Phase 1 surrounded by triple circle of closely spaced posts; inhumation in coffin with: Flanged axe, narrow with concave sides. Pair of tweezers with trapezoidal blades. Two plaques. Small ring. Phase 2 surrounded by ring ditch, several cremations, including one with a Drakenstein urn.

The axe is corroded and it is difficult to identify its type (Butler 1964b, 66). Tweezers like the Rechte Heide pair occur in north-western Germany during MIII (Bergmann 1970, Teil B, 63, Taf. 13, 11, Karte 97).

75. Drouwen, Borger, Drenthe.

Inv. Arch. NL12.

Inhumation burial in mortuary house under barrow with remains of stone revetment. Sögel sword, Inv. Arch. NL12, 1. Sögel flanged axe, 2. Tanged razor with oval blade, 3. Two coils of gold wire,

4-5. Nine flint arrowheads, 6-14. Flint ? strike-a-light, 15.
Whetstone, 16.

The section of the sword resembles that of the example in the burial from Siegenburg, Wetteraukreis, Hesse, and other swords (Kubach 1973b, 412 n.71, Abb. 2, 1a). This burial also contains a Sögel flanged axe and gold wire (*ibid.*, 407-408 n.32, Abb. 2, 6-7) and is dated by its pin to Reinecke B (*ibid.* 407, Abb. 2, 8). Butler considers that the razor is a British type. Flint arrowheads occur in the Netherlands and in northern Germany (Bergmann 1970, Teil B, 32; Laux 1971, 90); they are not closely datable in isolation but are known from other Sögel burials with swords and flanged axes (Kubach 1973b, 415 n.91, Abb. 4). Drouwen is the richest of these Sögel burials; Kubach's Reinecke B date may lower Butler's Reinecke A2, Hachmann's Horizon II.

76. Elp, Drenthe.

Waterbolk, 1961a, 127, fig. 2.

The barrow accompanying the Middle Bronze Age settlement contained three secondary inhumation burials which produced bronzes. Grave g: Pin with disc-head with slight flange and central projection, Waterbolk 1961a, fig. 2, 17. Fragments of spiral, curved and hooked wire, 14-16, 18. Grave d: Pin with nail head, slightly recessed, 10. Grave a: Pin shaft, 11.

The pin from grave g is similar to a series of Irish pins of the Late Bronze Age (Eogan 1974b, 79, fig. 2, 8), considered to be derived from the form with a small head bearing concentric ornament (*ibid.*, 95, fig. 3, 19). The context of the Elp pin suggests that it should be related to two examples in a burial from Dresden-Johannstadt, Fiedlerplatz (Coblentz 1952, 15, Taf. 2, 5-6). Half a century ago this burial was dated to MII and the pins compared with Spindelnadeln of Silesia and adjacent areas (von Richthofen 1926, 60-68, Taf. 18, d-g). More recent research has placed the Fiedlerplatz find in the local pre-Lausitz phase equated with Reinecke C2/D and phase IIa of the Lauzitz culture in eastern Bohemia (Bouzek 1967, 74, Abb. 1, 3), or with a slightly earlier period (Bouzek 1969, Abb. 3), late Tumulus in any case. The wire fragments from grave g are probably from spiral belt-hooks of late Tumulus south German origin (Ziegert 1963, Taf. 2). The pin from grave d probably belongs to the Wohlde variant (Laux 1976, 62; Bergmann 1970, Teil B, 45, Liste 126, Taf. 6, 20) which has an undifferentiated MII date.

77. Hijken, Drenthe.

Butler 1969, afb. 27.

Burial in barrow 9. Fragments of at least five bronze arrowheads, barbed, with spurred tangs. Roll-headed pin with twisted shaft.
Pin shaft.

Roll-headed pins with twisted shafts are known in north-western Germany from the Sögel phase onwards (Bergmann 1970, Teil B, 44, Liste 118, Taf. 6, 11, Karte 50; Laux 1976, 51-52). They form part of Hachmann's Horizon II with west Alpine origins in Reinecke A2 (1957,

83, 129). There are Swiss finds from Arbon-Bleiche, Thurgau (Fischer 1971, 17, Taf. 5, 1-4), and a Bavarian find with a disc-headed pin with a twisted shaft from Sinzenhof, Kr. Burglengenfeld, Bavaria (Hachmann 1957, 213 no. 541, Taf. 48, 31-32). Bavarian examples are also known during Reinecke B (Torbrügge 1959a, Abb. 10, 10) and French examples down to the end of the Late Bronze Age (Audouze and Courtois 1970, 36-37).

Tanged bronze arrowheads with spurs are mostly early Urnfield in date but an early Tumulus find comes from Barrow X, Lochham, Kr. München (Holste 1938, 36, Taf. 41, 11). A Sögel/Lochham date seems probable for the Hijken find.

78. Ballooërveld, Rolde, Drenthe.

Van Giffen 1935, 83-94, afb. 5, 9; Glasbergen 1954b, 23-24, 31, fig. 48b, 4; Butler 1965, 171, fig. 6.

Barrow 6, the Mandenberg, was of two phases. The first had two incomplete circles of irregularly spaced posts; seven secondary burials, inhumations in wooden coffins, respected these posts and some were cut by the second phase ring-ditch. One of these burials contained: Three small gold rings, Glasbergen 1954b, fig. 48b, 2-3, another contained: Two penannular bracelets with longitudinal ribs and expanded terminals with transverse ribs, a third burial contained: Two fragments of similar ribbed bracelets. Penannular bracelet, lozenge section.

The bracelets appear to combine features of earlier, MII bracelets, swollen form and expanded terminals (Bergmann 1970, Teil B, 54-55; Laux 1971, 59-60), with the transverse ribs on the terminals common on straight-sided MIII bracelets (*ibid.*, 66-67; *ibid.*, 60). The lozenge section bracelet also allows an early date (*ibid.*, 45-46, Taf. 7, 1e; *ibid.*, 61).

79. 'Galgenberg', Sleenerzand, Sleen-Zweeloo, Drenthe.

Van Giffen 1936, 104-110, afb. 10-11; Glasbergen 1954b, 22, 32 no. 16, fig. 47; Butler 1969, 110-114, afb. 50.

Barrow of three phases; phase 2 surrounded by a circle of widely spaced posts with a central burial. Palstave with inset face. Twisted bracelet. Tweezers with narrow blade. Two coiled gold rings. At least fourteen barbed and tanged bronze arrowheads.

The palstave belongs to the Oldenburg type (Butler 1963b, 212 no. 7).

Tweezers occur in MIII male burials in north-western Germany (Bergmann 1970, Teil B, 63, Liste 231, Taf. 13, 11, Karte 97). The arrowheads may best be compared with the examples in the Hijken burial.

Axe, tweezers and ring occur together in the Rechte Heide burial (74).

The gold spirals can be matched in Sögel burials, e.g. Drouwen (Kubach 1973b, 407-408 n. 32). Twisted bracelets occur mainly in MII in north-western Germany, rarely in MIII (Bergmann 1970, Teil B, 45-46, Liste 144, Taf. 7, 5, Karte 58; Laux 1971, 58-59). The Sleenerzand burial is difficult to date with precision and we must be content with Butler's Middle Bronze Age Elp culture, probably MII.

80. Kamperesch, Weerdinge, Drenthe.

Van Giffen 1930, 76-80, Taf. 71; Glasbergen 1954b, 22-23, 27 no. 1; figs. 48a; 48b, 7; Butler 1969, 114-116, pl. 12.

Barrow 2, bounded by a single circle of widely spaced posts; female inhumation, one of four secondary burials in the northern part of the barrow. Two wheel-headed pins, Glasbergen 1954b, fig. 48a. Roll-headed pin, ornamental shaft. Nail-headed pin, ornamental shaft, fig. 48b, 7. Penannular bracelet. Annular finger-ring. Necklace of amber beads.

The wheel-headed pins belong to Kubach's Unterbimbach type (1977, 170 n. 24) of his late Tumulus Traisbach phase (*ibid.*, 173-174; Gruber 1966, 6, 14, Karte III). In northern Lower Saxony this form belongs to early MIII, though somewhat older examples are known from southern Lower Saxony (Laux 1976, 22). Jockenhövel regards the Weerdinge pins as imports from western Germany, like the Opheusden razor (1971, 63); Kubach derives them from the Fulda area (1977, 177-178). Roll-headed and nail-headed pins from Lower Saxony rarely have decorated shafts; a nail-headed pin with decorated and perforated shaft comes from an early MII burial at Hohne, Kr. Celle (Laux 1976, 58-59 no. 300). The bracelet and ring may both be MII (see p. 86 ; 89). Amber beads are known during MII and, more rarely, MIII (Bergmann 1970, Teil B, 47, Liste 153, Taf. 7, 16-17, Karte 6; Laux 1971, 48).

Butler proposes the Weser area as the birthplace of the 'lady of Weerdinge' while emphasising the southern links shown by the wheel-headed pins. A date at the overlap of MII and MIII, Reinecke C2/D, is probable.

81. Zuidlaren, Drenthe.

Van Giffen 1930, 32-33, Taf. 19.

Barrow I, two burials in wooden coffins each contained a pin. Disc-headed pin with ornamented shaft. Disc-headed pin with ornamented and twisted shaft.

Kubach includes the Zuidlaren pin with twisted shaft among Reinecke B examples of this form (1977, 84 n. 67). There are examples of this date from Barrow X, Lochham, Kr. München (Holste 1938, 96, Taf. 41, 7; Inv. Arch. D14, 10), and Dirnismaning, Kr. München (Hachmann 1957, 134, 209 no. 471, Taf. 48, 5; Inv. Arch. D15, 2), Bavaria, and disc-headed pins with square or sinuous shafts are common in southern Germany (Torbrügge 1959a, Abb. 9, 10, 16, 18; 10, 1-2, 6, 13, 16) but rare in north-western Germany (Bergmann 1970, Teil B, 45; Laux 1976).

82. Overloon, Limburg.

Inv. Arch. NL13.

Hoard. Wohlde sword, Inv. Arch. NL13, 1. Blade of Wohlde sword, 6. Bagterp spearhead, 5. Plain spearhead with square peg-holes, 3. Sögel flanged axe, 2. Pin with perforated shaft and slightly expanded head, 4.

The Bagterp spearhead was probably manufactured in the Danish islands; it appears to belong to the Nordborg variant of the Torsted type (Becker

1967, 221-222, figs. 3-5) because of its length, ornament and ridges from the base of the blade to the rivet-holes. The plain spearhead is probably of north-west German origin. The axe is unusually long for a Sögel type (Kubach 1973b, 409); the only other Dutch find with a certain provenance is in the Drouwen burial (75). The pin is also a Sögel type, though not a common one (Bergmann 1970, Teil B, 28, Liste 52, Taf. 3, 11, Karte 18; Laux 1976, 48 n. 4) and may be compared with an example from Bargloy, Kr. Oldenburg, Lower Saxony (Inv. Arch. D 154, 2; Laux 1976, 48 no. 235). Jacob-Friesen (1967, 75) considered that the swords dated the Overloon hoard to Reinecke B. While later than the Drouwen burial, the Overloon hoard should still be within the late MI/Sögel/Reinecke B phase.

83. Epe, Gelderland.

Inv. Arch. NL15.

Hoard. Sickle with double knob and triple rib, Inv. Arch. NL15, 3. Vlagtwedde stop-ridge axe, 1. Broad-bladed palstave with long mid-rib flanked by shorter ribs, 2.

There is no independent dating evidence for the Vlagtwedde type of axe. The sickle and palstave may both be of British MBA 2 origin.

84. Den Burg, Texel, N. Holland.

Woltering 1973, 5-6, figs. 12-13.

Barrow surrounded by double ring of closely spaced posts. Inhumation in grave-pit. Pin. Palstave with flanged blade and collar around stop-ridge.

The palstave is badly corroded; its form is related to that of MII Nordic palstaves (Kersten n.d. (1935), 74-78) and also to certain north-west German forms (Laux 1971, 81, Taf. 73, 7). A date within MII is probable (Lomborg 1968, 114, fig. 7, 2).

85. Voorhout, S. Holland.

Inv. Arch. NL14.

Hoard. Flanged axe, Inv. Arch. NL14, 2. Two stop-ridge axes, 3, 5. Lugged chisel, 4. Thin palstave, 1. Five shield-pattern palstaves with a rib in the shield, 15-19. Nine shield-pattern palstaves, 6-14.

Only the flanged axe, with a parallel in the Veenenberg hoard (125), is a continental type. The stop-ridge axes and palstaves can all be matched in the north Welsh Acton Park group (Burgess 1974, 201) and analyses by Dr. J. P. Northover confirms a Welsh origin for the Voorhout axes. The lugged chisel is probably also of British origin; the type appeared in the Early Bronze Age but continued later (Burgess and Cowen 1972, 172-174).

86. Ommerschans, Overijssel.

Butler and Bakker 1961.

Hoard. Plougrescant-Ommerschans sword, Butler and Bakker 1961, fig. 5, left. Double edged razor with parallel sides, notch at one

end, two rivet-holes in the other, fig. 3, 2. Two chisels, 3-4. Rectangular section rod, 5. Two shafts, 6-7. Plate with longitudinal ribs, 8. Fragment of spiral wire. Three pieces of metal, 9-11. Two flint fragments, fig. 4, 14. Whetstone, 18. Stone chisels, 13, 16. Stone tablet, 17. Stone fragment, 14.

The ribbed plate may be part of a ribbed bracelet cast, but not yet curved. A more massive piece of comparable form comes from the Bronze Final III Amboise hoard, Indre-et-Loire (Cordier, Millotte and Riquet 1960, 115, fig. 3, 29). Butler and Bakker dated the Ommerschans sword to Ha A1 because of the occurrence of a ricasso on the related weapons from Kimberly and Beaune, while recognising that the ricasso appeared on Reinecke D weapons (Schauer 1971, 70 n. 2). The Ommerschans razor is a Sicilian type but its date is equivocal. One of the Ommerschans chisels is similar to the example in the MBA2 hoard from Sparkford, Somerset (Inv. Arch. GB46, 3).

OTHER REGIONS

87. Sporuplund, Aarhus Amt.

Broholm 1943, 93 grav 806; Butler 1963a, 96-98, fig. 27; Jacob-Friesen 1967, 213, 319 no. 518, Taf. 110, 6-8; Lomborg 1973, 152, fig. 86; Gerloff 1975, 152.

Burial. Flange-hilted sword, Jacob-Friesen 1967, Taf. 110, 6.

Chape, 7. Spearhead with dagger-shaped blade, 8.

The sword and chape are both MII, in the later part of the period according to Jacob-Friesen and Lomborg. The spearhead is close to the Arreton type of the end of the British Early Bronze Age (Britton 1963, pl. XXVII, right); Butler considers that it is a derivative from the British form and concludes that the Arreton industry was still current at the beginning of MII. Lomborg disputes this derivation and points out the chronological difficulty which it creates; the sword and chape are late MII, contemporary with Reinecke C2 and the later Middle Bronze Age in western Europe.

88. Habsheim, Haut-Rhin, Alsace.

Zumstein 1966, 30-32, 122-124, fig. 43; Abels 1972, 42-45, 79-80, Taf. 66D.

Hoard. Flanged axe, Möhlin type, variant A, Abels no. 309. Flanged axe, Herbrechtingen type, variant C, 326. Thirteen flanged axes, Habsheim type, variant A, 541-553. Flanged axe, Habsheim type, variant B, 557. Two shield-pattern palstaves, rib in shield, *ibid.*, Taf. 66D, 4-5.

Zumstein places the Habsheim hoard in Bronze Moyen I because of the palstaves; the flanged axes are characteristic of Bronze Ancien. For Abels, the Habsheim hoard is characteristic of Reinecke B, for which it is eponymous in combination with Lochham (1972, 44, Taf. 69). The palstaves may be compared with the example with rib and shield in the Pyritz hoard (97) 11.

89. Halle-Oldendorf, Kr. Halle, Westphalia.

Lange 1959; Sudholz 1964, 51-52, 105-106 no. 254, Taf. 18; Jacob-Friesen 1967, 112-113, Taf. 18, 1-3.

Hoard. Spearhead with decorated socket, Jacob-Friesen 1967, Taf. 18, 1. Upper part of flanged axe, straight sides, notched butt, 2.

Blade of a shield-pattern palstave, 3.

Sudholz dates the hoard to MIIa on the evidence of the palstave. Both she and Jacob-Friesen claim southern influence for the spearhead and compare an example in the well-known hoard from Cascina Ranza, Milan. The date of this hoard is not easy to determine, for it contains no Italian types, but derives from Switzerland and southern Germany and its contents are not chronologically homogeneous. Von Merhart (1941) and Sprockhoff (1941, 70-71) placed it in the early Tumulus phase but Hachmann (1957, 137-141) preferred a middle Tumulus date, Reinecke C1/B2; Jacob-Friesen (1967, 113) followed Hachmann and equated this date with late MI, the same as Sudholz's MIIa. Abels concludes that the latest axe in the Cascina Ranza hoard could be Reinecke C1 (1972, 44) and Osterwalder dated the latest objects to the second phase of her Swiss Middle Bronze Age, broadly contemporary (1971, 27-29, 58). Schauer gives a Reinecke B date to the trapezoidal-hilted rapier from Cascina Ranza (1974b, 27). If the latest date for Cascina Ranza is applied to the Halle hoard it should be early MII, later than the late MI/MIIa date proposed by Sudholz and Jacob-Friesen, but an earlier date is not excluded.

90. Hausberge, Kr. Minden, Westphalia.

Sprockhoff 1941, Taf. 29; Hachmann 1957, Taf. 46, 3-5; Sudholz 1964, 76, 109-110 no. 296, Taf. 15; Lomborg 1968, 104, 142, figs. 2, 6; 5, 1.

Hoard. Slender flanged axe with bands of lines of the sides, Hachmann 1957, Taf. 46, 3. Dagger with trapezoidal hilt and four rivets, 5.

Shield-pattern palstave with indistinct stop-ridge, offset blade with grooving on sides and faces, 4.

The palstave is not a British type. The dagger, a Wohlde form according to Bergmann (1970, Teil B, 24, Liste 22, 11), can be equated with south German forms of Reinecke B (Torbrügge 1959a, fig. 9, 15); Lomborg uses the Hausberge find to correlate his Valsømagle horizon, characterised by flanged axes like the Hausberge example, with the Lochham phase, late MI with Reinecke B.

91. Hüvede, Kr. Lingen, Lower Saxony.

Sprockhoff 1941, Taf. 28, 6-9; Sudholz 1964, 76, 92 no. 101, Taf. 14; Bergmann 1970, Teil A, Liste 15, 7.

Hoard. Two flanged axes, Sudholz 1964, Taf. 14, 1-2. Stop-ridge axe, 3. Shield-pattern palstave, indistinct stop-ridge, offset blade, 4.

The palstave is not a British type; it resembles that of the palstave in the Hausberge hoard (90). Both Sudholz and Bergmann date the Hüvede hoard to the Sögel phase.

92. Ilsmoor, Neukloster, Kr. Stade, Lower Saxony.

Sprockhoff 1941, Taf. 24; Hachmann 1957, Taf. 45, 14-22; 46, 1-2; Bergmann 1970, Teil A, Liste 15, 3; Laux 1971, 235 no. 397.

Hoard. Shaft-hole axe, Sprockhoff 1941, Taf. 24, 12. Seven palstaves with Y-ornament, 1, 5-7, 9-11. Two stop-ridge axes, Laux refers to only one (1971, Taf. 9, 5; Sprockhoff 1941, Taf. 24, 3), 3, 8. Two shield-pattern palstaves, Laux claims that one (Sprockhoff 1941, Taf. 24, 2) does not belong to the hoard and this palstave is not illustrated by Hachmann, 2, 4.

The palstaves with Y-ornament belong to Bergmann's earliest type (1970, Teil B, 27, Liste 46, Taf. 3, 7, Karte 16), Laux's Neukloster type (1971, 84, Taf. 75, 3) of the Sögel phase and the subsequent Zeitgruppe I. Lomborg (1968, 108, fig. 4) includes this form in his late MI Valsømagle horizon. The shaft-hole axe has been related to the early MI Fardrup type (Bergmann 1970, Teil B, 28, Liste 47; Laux 1971, 85) but shaft-hole axes also occur in the subsequent Valsømagle horizon (Lomborg 1968, 104, fig. 2, 3). Laux places the flanged axe which he attributes to the hoard in his Harsfeld-Haassel type of Sögel date (1971, 80, Taf. 9, 5). A Sögel/Valsømagle date is probable for the Ilsmoor hoard.

The large shield-pattern palstave (Sprockhoff 1941, Taf. 24, 2) should be a Tréboul or Acton Park type and the stop-ridge axe (*ibid.*, Taf. 24, 8) could be contemporary. The second shield-pattern palstave (*ibid.*, Taf. 24, 4) may be compared with the example in the Tréboul hoard from Plouguerneau, Finistere (Briard 1965, fig. 24, 6), which Burgess (1974, 201 n.225) identified as an Acton Park type.

93. Stade-Camp, Kr. Stade, Lower Saxony.

Sprockhoff 1941, Taf. 30; Bergmann 1970, Teil A, Liste 15, 4; Laux 1971, 236, no. 410.

Hoard. Ten palstaves with Y-ornament, Sprockhoff 1941, Taf. 30, 1-6, 10-13. Shield-pattern palstave, 9. Copper cake, bronze debris, casting jets, 7-8.

The palstaves with Y-ornament belong to Bergmann's earliest type (1970, Teil B, 27, Liste 46, Taf. 3, 7, Karte 16), Laux's Neukloster type (1971, 84, Taf. 75, 3) of Sögel and Zeitgruppe I date, and they occur in Lomborg's late MI Valsømagle horizon (1968, 108). The shield-pattern palstave is probably a Tréboul/Acton Park form.

94. Neuhaldensleben, Bez. Magdeburg, Saxony.

Sprockhoff 1941, Taf. 28, 2-5; Jacob-Friesen 1967, 113, 127, Taf. 33, 7-10; von Brum 1968, 144-145, 322 no. 86, Taf. 80, 4-7.

Hoard. Valsømagle spearhead, Sprockhoff 1941, Taf. 28, 4.

Bohemian palstave, 5. Shield-pattern palstave, 3. Sprockhoff and Jacob-Friesen include a plain palstave with rounded stop-ridge, 2.

Von Brunn includes instead a north German palstave with Y-ornament, 1968, Taf. 80, 6.

The chronological range of Bohemian palstaves is wide (Fox and Britton 1969, 224-225; Novotná 1970c, 40-41; Tackenberg 1971, 12-13).

According to Hachmann (1957, 131), the Neuholdensleben palstave is a developed type contemporary with Reinecke C1/B2. Bergmann lists examples (1970, Teil B, 41, Liste 104, Taf. 5, 19, Karte 45) including one in a MII burial from Marxen, Kr. Harburg (*ibid.*, Teil A, Liste 2, 28). Tackenberg (1971, Liste 3, Karte 3) includes finds from north of the Elbe and central Germany. Only eight Bohemian palstaves are known from the north-west German plain. Jacob-Friesen (1967, 127) denies that the spearhead has any British characteristics and states that it is ein klarer Valsømagletyp; he dates the find to late MI. The plain palstave illustrated by Sprockhoff many belong to his group of narrow-bladed palstaves (1941, 43-45, Abb. 35a, Taf. 22, 3). A precise date for the Neuholdensleben hoard is difficult to determine (Butler 1963a, 215 n.2); von Brunn places it in MII and Jockenhövel (1971, 37 n.15) in MII. Such a date, i.e. late MI, is supported by the Valsmøgle spearhead and, should it be included, the palstave with Y-ornament (Lomborg 1968, 104-105, 108).

The shield-pattern palstave may be compared with the example in the Tréboul hoard from Plouguerneau, Finistère (Briard 1965, fig. 24, 7), which Burgess has identified as an Acton Park palstave,

95. Seelow, Kr. Lebus, Brandenburg.

Sprockhoff 1941, Taf. 28, 12; von Brunn 1968, 288, Liste 68 no. 24.

Hoard. Two shield-pattern palstaves with indistinct stop-ridges.

Sickle fragments.

The palstaves are not British; the date of the hoard is uncertain.

96. Rüthlow, Kr. Neubrandenburg, Mecklenburg.

Sprockhoff 1941, Taf. 27; Hachmann 1957, 129-130; Jacob-Friesen 1967, 128; Schubart 1972, 66, 148 no. 295, Taf. 59.

Hoard. Three flanged axes, Schubart 1972, Taf. 59, 2, 14, 18.

Two flanged axe with slight stop-ridge, 5, 19. Broad-bladed palstave,

1. Shield-pattern palstave with indistinct stop-ridge and offset blade,

4. Side-flanged axe with midrib, 15. Plain spearhead, 12. Ribbed

collar, 6. Two coiled armlets with spiral terminals, 3. Eight plain

coiled armlets, 13. Fragments of six spirals, 7-10. Two double-

spiral pendants, 16-17. Several spiral beads, 11.

Schubart places this hoard at the MI/II transition in his Priepert group characterised by double-spiral pendants and spearheads. Jacob-Friesen and Hachmann proposed similar dates on the basis of the shield pattern palstave; this appears to belong to the group with indistinct stop-ridge common in the Nordic area. The broad-bladed palstave resembles the Tréboul/Acton Park form more than any other. The side-flanged axe, apparently with low flanges (Sprockhoff 1941, Taf. 27, 8), may be related to the French type of hache à talon naissant (Briard and Verron 1976a, 80, fig. 4; Gaucher 1973, fig. 6. A, 5); Burgess remarks on a similar axe in the Acton Park hoard from Moelfre Uchaf, Denbigh (1976a, 73), which he compares with the examples in the Babbin hoard, Kr. Pyritz, Pomerania (Hachmann 1957, 198 no. 274, Taf. 37, 1). Both the Rüthlow and Babbin hoards belong to the beginning of MII (Schubart 1972, 14 n. 23; 29 n. 135).

97. Pyrzyce (Pyritz), Prov. Szczecin, Pomerania.

Sprockhoff 1941, Taf. 31; Kersten 1958, 70 no. 662, Taf. 68.

Hoard, originally twenty palstaves, all fresh castings. Five palstaves with indistinct stop-ridge, undecorated or with slight depression below stop-ridge, Sprockhoff 1941, Taf. 31, 1-5. Seventeen palstaves with indistinct stop-ridge and shield-pattern, 6-10, 12-18. Palstave with indistinct stop-ridge and shield-pattern containing rib, 11.

The shield-pattern palstave with midrib may be compared with the shield-pattern palstaves in the Habsheim hoard (88) and the others with the Acton Park palstaves in the Voorhout hoard (85).

98. Ostenfeld, Kr. Rendsburg, Holstein.

Kersten n.d. (1935), Taf. VI-VII; Hingst 1956, Abb. 3, 4-6; 4, 1; Butler 1963a, 63, fig. 16, 6-7, 73 no. 12; Struve 1971, 65, Taf. 17, 6-7; 20, 1-7; 21, 5.

Hoard, not completely published; within MII, its precise date is uncertain. Apart from about fifty objects of Nordic origin, it contains: Narrow-bladed looped palstave, Struve 1971, Taf. 21, 5. Broad-bladed palstave with short side-flanges and trident ornament, Hingst 1956, Abb. 3, 4.

The looped palstave appears to be either Norman or a closely related British derivative. The side-flanged palstave is presumably of British Middle Bronze Age origin.

99. Masendorf, Kr. Uelzen, Lower Saxony.

Sprockhoff 1934, Taf. 7, 1-3, 8-10; 1937, 15; Butler 1963a, 73 no. 16.

Hoard. Two sword fragments, Sprockhoff 1934, Taf. 7, 1. Knobbed sickle, 10. Two brooches, 9. Seven twisted neck-rings with recurved terminals, 3. Ten tutuli, 2. Looped palstave with midrib, 8.

Sprockhoff originally dated this hoard to MIV and he has been followed by Tackenberg (1971, 4) and Laux (1973, 24). Sprockhoff and Laux both refer to the palstave as north German and it does not appear to be of British or French origin. Palstaves of similar form to the Masendorf example, but unlooped with a narrow rib, are found in central Germany, e.g. Wistedt and Molmke, Kr. Salzwedel (Stephan 1956, Taf. IX, 5; XXIV, 7). Butler considered that the Masendorf palstave was probably a Nordic imitation (1963a, 73).

100. Frøjk, Ringkøbing Amt, Jutland.

Broholm 1943, 224 M80-81, pls. on pp. 222-223; Butler 1963a, 63, fig. 16, 1-3, 73 no. 13; Jacob-Freisen 1967, 141-142, 323 no. 592; Taf. 60-61.

The two finds listed by Broholm probably constitute a single hoard. Fragments of three Kirke Saby spearheads, Jacob-Friesen 1967, Taf. 60, 3; 61, 7-8. Fragments of two Ullerslev spearheads, Taf. 60, 8; 61, 6. Fragments of another spearhead, Taf. 60, 9. Eleven north European palstaves, Taf. 60, 4, 6-7; 61, 5, 9. Five plain narrow-bladed palstaves, Taf. 60, 5; 61, 4. Side-flanged palstaves,

looped with midrib, Taf. 61, 1. Broad-bladed palstave with irregular grooves on blade, Taf. 61, 2. Broad-bladed palstave with grooved ornament on one face and inset with long midrib on the other, Taf. 61, 3.

Broholm and Jacob-Friesen both place the hoard in MII. Butler (1963a, 63) related the broad-bladed palstaves to the examples in the Bernay-Ponthoile and Mont-Saint-Aignan hoards; Rowlands considers that the looped palstave belongs to his Class 2/2 (1976, 31). These broad-bladed palstaves may all be of western origin.

101. Meikirch, Bern, Switzerland.

Osterwalder 1971, 36, 72, Taf. 14, 1-8.

Hoard. Butt of flanged axe, Osterwalder 1971, Taf. 14, 7. Sickie, 3. Tanged chisel, 5. Fragment of double-edged blade, 4. Open-work disc, 6. Two penannular bracelets with zig-zag ornament, 1-2. Lower part of palstave with curved stop-ridge, double inset and rib ornament, 8. Two fragments of casting waste.

The palstave appears to be Norman. Osterwalder places this hoard in the third phase of the Swiss Middle Bronze Age, approximately equivalent to Reinecke C2 (1971, 58).

BRITAIN

102. Ffynhonnau, Brecon.

Banks 1884; Savory 1958a, 27-28, fig. 3.

Hoard. Two looped palstaves with tapering midribs, Savory 1958a, fig. 3, 5. Two conical ferrules, 1-2. One dirk with slightly leaf-shaped blade, broad midrib, damaged hilt, 4. Single-edged tanged knife with convex back and slightly recurved tip, incised ornament on the back, end of tang damaged, 3.

The dirk belongs to the Irish Cutts type of Group IV (Burgess 1968b, fig. 5, 2; 1968c, 14, 25 no. 15; 1974, 205 n. 276). The knife is an early Urnfield type; while the tang is damaged, its tapering profile suggests a hooked terminal rather than a perforated terminal. A Ha A2 date is likely (see p.100).

103. Grunty Fen, Cambs.

Von Hügel 1906-08; Eogan 1967, 140-141, 166 no. 32, pl. 14; Rowlands 1976, 226 no. 9.

Hoard; the palstaves were found together twelve inches above the torc. Looped Norman palstave, trident ornament, Von Hügel 1906-08 pl. III, 1. Looped Norman palstave trident ornament, 2. Looped palstave with midrib, 3. Gold bar torc, coiled, pl.

The Norman palstaves are somewhat broad, typologically late examples with straighter stop-ridges than are usual on the looped form but they can be matched in the hoards from La Chapelle (46) 4 and Aubergenville (69) 2. Trident ornament is more common on palstaves on MBA2 date than on later palstaves which usually bear a midrib like the third Grunty Fen palstave. Smith (1959, 184, fig. 7, 3) considered all three examples 'transitional'. Eogan concluded that gold bar torcs were derived from Middle Bronze Age bronze twisted neck-rings (1967, 160-161) so a date at the transition from MBA2 to LBA1 is acceptable for the Grunty Fen hoard.

104. Eglwyseg Rocks, Denbigh.

Davies 1929, 273, fig. 83; Burgess 1968a, 9, fig. 5, 4a-b.

Hoard. Pegged spearhead with short socket and broad, leaf-shaped blade with offset edges. Burgess 1968a, fig. 5, 4a. Pegged spearhead with long socket and narrow, leaf-shaped blade bearing ridges, 4b.

It is difficult to match the first spearhead; offset edges only appear to be common on Wilburton spearheads (see p.138). The proportions of the second spearhead are unusual, though they can be matched on an example from Ireland, with offset edges (Leeds 1930, fig. 6, c). The ridged blade of the Eglwyseg spearhead may be derived from the Enfield

type (see p. 194-5). There is a pegged spearhead with a broad ridged blade in the Rosnoën hoard (Briard and Giot 1958, 24, pl.II, 6; Burgess 1968a, fig. 5, 5); the long socket is also a Rosnoën characteristic (see p. 101).

105. Ongar Hall, Orsett, Essex.

Burgess 1974, 204 n.250; Rowlands 1976, 234 nq. 43, pl. 23.

Thurrock Local History Museum, Grays. 1051.1-8. Fig. 33.

Hoard. Rapier with concave lozenge-section and slight traces of bevelled edge. No remains of rivet attachment, Fig. 33, 1. Rapier with triple-edged blade, two broken rivet-holes, 2. Two rapiers with lozenge-section blade and offset edges, two broken rivet-holes, 3-4. Rapier with broad blade and offset edges, two broken rivet-holes, 5. Pegged spearhead with ogival blade, bevelled edges and angular midrib, 6. Looped palstave with broad blade and thick, tapering midrib, 7. Looped socketed axe, straight sides tapering very slightly; sub-square mouth with plain collar moulding; oval section becoming solid rectangular about half-way down, 8.

Burgess (1974, 204 no. 250) attributes the rapiers to Groups II, III and IV. 1 clearly belongs to Group II and 2 to group III; 5 presumably falls within Group IV. Rapiers similar to 3 and 4, lozenge sections with offset edges occur in the hoard from Talaton, Devon (Rowlands 1976, 230 no. 27, pl. 22, 1-2, 5) and Burgess appears to include these in his group III (1968c, 24 no. 6) though this form of section seems distinct from the 'classic' triple-ridged section of Group III. The spearhead belongs to the continental ogival-bladed group (List 21, 17); its ridged socket is characteristic of Bronze Moyen (see p. 101). The socketed axe is difficult to match among other early forms; though slender, it is more massive and has a long solid blade. It may be compared with an axe in the late MII hoard from Kappeln, Kr. Schleswig (Aner 1962, 202, Abb. 19, a). The looped palstave, broad-bladed with a thick midrib, indicates a LBA1 date; this is a transitional hoard.

106. Thorpe Hall Brickfield, Southchurch, Essex.

Pollit 1930; Rowlands 1976, 235 no. 45, pl. 36.

Possible association. Looped palstave with broad midrib. Rowlands 1976, pl. 36, (45), 1. Ballintober sword, 2.

Smith (1959, 184) compared the palstave to the looped Norman example in the Crediton hoard (5), but the straight stop-ridge and broad midrib suggest that it is a more developed form. Burgess accepts the association (1974, 206 n. 277) which would be late LBA1 because of the leaf-shaped sword.

107. Langrove, Penard, Gower, Glamorgan.

Crawford and Wheeler 1920-21, 137-138, pl. XII, fig. 3.

Hoard. Socketed axe, Crawford and Wheeler 1920-21, pl. XII, fig. 3, 1. Fragments of two Ballintober swords, 2-3. Blade of a Rosnoën sword, 4. Fragmentary pegged spearhead, 5. Barbed and tanged bronze arrowhead, 6.

The socketed axe belongs to Burgess' Penard-Trawsfynydd type, typologically later than Taunton-Hademarschen axes (1962a, 21-23, fig. 2, b; 1968a, 35, fig. 4, 6). The spearhead can be matched in hoards of the Rosnoën phase (Briard 1965, fig. 51, 2-3) and in the hoard from Worth, Devon, associated with a Ballintober sword (Burgess 1968a, 35, fig. 3, 7). The arrowhead can be matched in early Urnfield contexts but is difficult to date precisely (see p. 103). Reconstruction of the Rosnoën sword is shown by Burgess (1968b, fig. 5, 1). This hoard is eponymous for Burgess' Penard phase (1968a, 4, 34-35; 1974, 205) but the presence of leaf-shaped swords indicates that it must belong to the later part of LBA1 and the probable date of the arrowhead supports this dating.

108. Langdon Bay, Dover, Kent.

Coombs 1975b; Stevens 1976. BM P 1977 4-2. Figs. 34-35.

Group of bronzes discovered by divers in the eastern part of Langdon Bay. Most of the finds came from a narrow gully in the chalk. It has not yet been established whether or not the site was under water during the Bronze Age. All the objects have been eroded, some very badly. Thirty median-winged axes and one blade edge; all the better-preserved examples are massive with straight sides, short wings and notched butts, Fig. 34, 1-3. Twenty-four palstaves and one blade edge; all the better preserved examples appear to be looped. Two examples, 4-5, retain midrib ornament and two, 6-7, inset ornament, Fig. 34, 4-16; 35, 17-27. Twenty-eight fragments of double-edged blades, including nine notched butts. One fragment 30, is thicker than the others, Fig. 35, 29-31. Pegged spearhead with long socket, Fig. 35, 32. Spearhead blade, Coombs 1975, fig. 1, 10. Looped socketed axe, with a mass of bronze, including a double-edged blade fragment, in its socket, Fig. 35, 33. Socketed tool, mouth damaged, 34. Tapering socketed object, 35. Shield-shaped fragment, broken at both ends, one end appears to have had a tang, 36. One pin, swollen at one end, 37. Two fragments of uncertain origin.

The winged axes all belong to the massive eastern French Bronze Final I form (see p. 184-6). The prevalence of massive looped palstaves suggests that these belong to the Rosnoën type; inset ornament is not usual on Rosnoën palstaves though the double inset on 6 could be the remains of trident ornament. Coombs (1975b, 194) identifies some of the Dover palstaves as Breton but I can recognise no certain example of this type. 33 and 34 are early socketed axes. The identification of 35 is uncertain; its sub-rectangular section suggests that it may be a socketed chisel, cf. the example in the Bronze Final I hoard from Kergoff en Noyal-Pontivy, Morbihan (Briard 1965, fig. 52, 4), rather than a ferrule, as suggested by Coombs (1975b, 194). The more complete spearhead has the long socket characteristic of Rosnoën spearheads (see p. 193-4). The recognisable hilts could all belong to Rosnoën swords, though rapiers could be present. The hilt with a narrow rib 28 may be compared to the example in the Saint-Just-en-Chaussée hoard (115) 3, showing Rixheim influence. The pin could belong to any form with an unperforated swollen neck. The reconstruction and identification of the shield-shaped fragment are uncertain.

The predominance of median-winged axes over palstaves relates this hoard to Bronze Final I in eastern rather than western France (see p. 96). Only for the looped socketed axe is British origin more likely than French (see p. 98). If 35 is interpreted as a chisel rather than as a ferrule, a Bronze Final I/Reinecke D date is acceptable for the hoard, i.e. early LBA1. The poor condition of the bronzes precludes attribution to specific types in many cases; the composition of the hoard may not originally have been so homogeneous as it appears now. Most of the axes appear to be complete but the mass of bronze in the looped socketed axe should indicate the presence of some scrap. The circumstances of discovery mean that we can be less certain than usual about the proportion of the hoard which has been recovered. The Dover hoard is large nevertheless, ninety-three fragments of at least seventy objects, and it is larger than any contemporary hoard from Britain or north-eastern France, larger even than the Rosnoën hoard which contains twenty-nine pieces (Briard and Giot 1958, 24), though cf. the La Vaquerie find (117). The Dover hoard emphasises the importance of relations between south-eastern England and north-eastern France.

109. Appleby, Lincs.

Davey and Knowles 1971.

Hoard. Three Group IV rapiers with rivet-holes, Davey and Knowles 1971, fig. 1, 1-3. Group IV rapier with rivet-notches, fig. 2, 4. Group IV rapier with damaged hilt, fig. 2, 5. Two Rosnoën swords with four notches, fig. 2, 6-7. Cast of a solid-hilted sword with straight, lozenge-section blade, fig. 3, 8. Enfield spearhead, fig. 3, 9. Blade of Enfield spearhead, fig. 3, 10. Badly-cast spearhead, no rivet-holes, fig. 3, 12. Spearhead socket, possibly from 10, fig. 3, 11. Two more pieces, found later, may form part of the hoard: Group IV rapier with rivet-holes, fig. 4, 15. Enfield spearhead, fig. 4, 16. Two socketed axes are less likely to be part of the hoard: Yorkshire socketed axe, fig. 4, 13. Unlooped faceted axe, fig. 4, 14.

Group IV rapiers, only one notched, Rosnoën swords and Enfield spearheads suggest a date early in LBA1. The solid-hilted sword can be matched in the Ambleside hoard (112) 1, but the straight blade allows an early date. The poor casting of spearhead 12 may be responsible for the absence of rivet-holes. Rosnoën spearheads usually had rivet-holes (Briard 1965, 157) and the drawings cited by Davey and Knowles (1971, 159 n.5; Briard 1965, fig. 51, 7, 9) are copies of old illustrations.

110. Downham Market, Norfolk.

Burgess 1968a, fig. 4, 1a-c; 1968c, 24 no.10; Rowlands 1976, 226 no. 8.

Hoard. Group IV rapier with notched butt, Lisburn type, Burgess 1968a, fig. 4, 1c. Looped palstave with broad midrib, 1b. Ring-socketed sickle, 1a.

111. Eriswell, Suffolk

Briscoe and Furness 1955; Burgess 1968c, 24 no. 11; Rowlands 1976, 260 no. 124. Elveden Estate Museum. Fig. 36A.

Hoard. The following objects were found together in a patch of black soil: Sword with broad blade, oval section with bevelled edges; the maximum thickness of the sword, just below the hilt, is marked by a midrib on each face. The hilt is of tapering form with a pair of rivets in rivet-holes, a pair of rivet-notches, and a short tang, flanked by two possible notches; the tang does not appear to be broken. There is a ricasso, roughly notched after casting, Fig. 36A, 1. Two Group IV rapiers with notched butt, Lisburn type, 2-3. Awl, 4. Subsequent investigation revealed another group of bronzes in plough soil three yards away: Flesh-hook, Briscoe and Furness 1955, pl. XXXIV a. Fragments of riveted sheet bronze. One piece, roughly rectangular, has rivet-holes along two sides; another, also rectangular, has rivet-holes along two sides with remains of the attached bronze sheet, pl. XXXIV b. Later still, fifty yards away, was found a: Tip of a double-edged blade, pl. XXXIV b.

The Eriswell sword has been attributed to various types. Burgess has called it a Rixheim sword (1968c, 14), a rod-tanged sword (1974, 319 n.277) and related it to the Arco sword from the Thames (1968a, 44; List 68, 1). Coombs has also referred to it as a rod-tanged sword (1975a, 50, fig. 3, 6), and Jockenhövel as a Monza sword (1974a, 331). Trump considered that it was of French origin, 'a hybrid between true swords and Rixheim rapiers' (1968, 219-221). A Rixheim identification was also favoured by Eogan (1965, 7). The Eriswell sword is not a characteristic Rixheim form (Jockenhövel 1975, 142) and it does not appear to have a broken rod-tang. The form of the Eriswell hilt is closest to that of Mantoche swords (Reim 1974a, 24-26) which have a short tang and, usually, a pair of rivet holes and a pair of rivet notches, but the holes are usually above the notches, not below. A Mantoche sword from the Doubs at Pontoux, Saône-et-Loire, has a broad blade like the Eriswell example, and a ricasso, but it has four rivet-holes and a midrib flanked by grooves (*ibid.*, no. 39). Mantoche swords occur north of the Alps between the Cher and the Neckar (*ibid.*, 26, Taf. 15), but none has been found in northern France; they probably belong to Reinecke D and the Pontoux sword is a later example (*ibid.*, 45-46). The notched ricasso first appears on swords of Reinecke D (*ibid.*, 58; Schauer 1971, 70 n.2). The short rib on the Eriswell sword is presumably related to the butt ridge which occurs on Rosnoën, Chelsea and Ballintober swords (Burgess 1968c, 15-16; 1968a, fig. 3, 2-5). The notched ricasso can be matched on some Rosnoën swords (Gaucher and Mohen 1972, 312). The sword from the Trent at Nottingham (List 76, 3) has a broad blade like the Eriswell sword but different section and hilt. It is difficult to match the oval section of the Eriswell sword.

The Eriswell sword appears to be a unique weapon. Its blade is thick and heavy, prodigal in use of metal; while it feels as if it would only have been practical as a slashing weapon, the hilt appears insecure. Typologically, it appears to be transitional between the straight-bladed and leaf-shaped form and this suggests a date in the middle of the LBA1.

The Group IV rapiers accord with this date; the chronological range of awls is very wide (Bradley and Ellison 1975, 88) and there is an example in the LBA3 hoard from Thorndon, Suffolk (Inv. Arch. GB11, 5).

Burgess (1968c, 24 no. 11), Jockenhövel (1974a, 330 no. 18) and Coombs (1975a, fig. 1) all include the flesh-hook and sheet bronze as part of the same hoard as the sword, rapiers and awl. This cannot be certain, though the two groups of bronzes may be contemporary.

Of British sheet bronze artifacts, only buckets and cauldrons display the configuration of rivet-holes which appears on the Eriswell sheets (Jockenhövel 1974a, 330). The Eriswell flesh-hook is similar in form and dimensions to the example from Feltwell, Norfolk (*ibid.*, 329 no. 4, Abb. 1, 4) found with a Class A1 cauldron (Norwich 1977, 29-30, figs. 97, 108). It is unfortunate that the association between the two groups of bronzes at Eriswell is not sufficiently certain to provide further evidence for the early origin of cauldrons in Britain (see p. 147-8).

112. Ambleside, Westmorland.

Fell and Coles 1965, 38-47; Burgess 1968b, 5-7, 63 no. 16, fig. 4.

Hoard. found in 1741, a description and illustrations are preserved in the Minute Book of the Spalding Gentlemen's Society.

Solid-hilted sword with straight-sided blade, Fell and Coles 1965, fig. 1, 1. Sword with straight-sided blade and four rivet holes in hilt, 2. Solid-hilted rapier, 3. Straight-bladed basal-looped spearhead, 4. Conical object, 5. Looped palstave with broad blade and midrib, 6.

The description and illustration allow confident identification to be made in all cases. The solid-hilted sword can be matched in the Appleby hoard (109) 8. The second sword is probably a Rosnoën type. The presence of two rivets indicates that the rapier is a conventional trapezoidal-hilted form with a solid hilt (List 29, 1); the associations at Ambleside suggest that it would have belonged to Group IV. A blade of Group IV section was found with a solid bronze hilt at Belleek, Co. Fermanagh (Evans 1881, 234, fig. 292), but this has two additional rivet-holes, as well as a notch, and its blade is broken so precise identification is impossible. The conical object is a ferrule. The spearhead belongs to the Enfield type.

NORTH-EASTERN FRANCE

113. Between Saint-Chéron and Sermaize, near Dourdan, Essonne. Giraud 1955.

Hoard. Median-winged axe, massive, straight sides, short wings, notched butt. Pin with trumpet head and ribbed swollen neck.

Pin with trumpet head and ribbed swollen neck with two bands of vertical incised ornament.

The axe belongs to the eastern French type of Bronze Final I. Gaucher uses the pins to illustrate his Courtavant and Saint-Gervais types of Bronze Final I (1976, 580, fig. 3, 213).

114. Anzin, Nord.

Mohen 1972, 451, fig. 4; Gaucher and Mohen 1974, 45-47, 109, Anzin, ill.25.

Hoard. Median-winged axe, massive, straight sided, short wings, notched butt, Mohen 1972, fig. 4, 1. Unlooped palstave with narrow blade and straight stop-ridge, 2. Spearhead blade (lost), 3. Two penannular bracelets, round section, plain terminals incised ornament, bands of transverse lines, hatched lines, cruciform motifs, 4-5.

Gaucher and Mohen compare the palstave with late Breton forms (1974, 47); unlooped palstaves are not common in northern France after Bronze Moyen except in residual contexts. The median-winged axe belongs to the eastern French type of Bronze Final I. The spearhead is probably a pegged Rosnoën type. The bracelets are similar in form and ornament to the incised bracelet in the Bois-de-Lessines hoard (121) f and, like this bracelet, they are probably related to the Reinecke D Nieder-Flörsheim type (Richter 1970, 107-111).

115. Saint-Just-en-Chaussée, Oise.

Blanchet and Mohen 1977.

Hoard. Trapezoidal-hilted rapier with broad midrib and rivet-notches, Blanchet and Mohen 1977, fig. 2, 2. Dagger with tapering blade, broad midrib, notched butt, fig. 2, 1. Rosnoën sword, four rivets, figs. 2, 7; 3, 7-9. Straight bladed sword with broad midrib, tapering hilt with four notches and narrow midrib, figs. 2, 3; 3, 3, 20-21. Hilt of straight-bladed sword with broad midrib, two notches in sides, two in top of hilt, fig. 2, 4. Hilt of straight-bladed sword with broad midrib, two notches in broken hilt, fig. 2, 5. Fragment of flanged hilt, tapering towards the pommel, four rivet-holes, fig. 2, 6. Two fragments, including the point, of a straight-bladed sword the broad midrib, fig. 3, 18-19. Eight fragments of straight-bladed swords with broad midribs, fig. 3, 10-17. Fragments of five spearheads with solid, leaf-shaped blades, the surviving sockets have peg-holes, fig. 4, 25-29, 31. Butt fragment of a median-winged axe, notched, fig. 4, 22. Fragment of a looped palstave with tapering midrib, fig. 4, 23. Wheel-shaped pendant with central perforation and, originally, six spokes, fig. 4, 24. Fragment of a pin with ribbed swollen neck and, above and below, a pair of triangles filled with horizontal grooves, fig. 4, 30.

Trapezoidal-hilted rapiers with notched butts appear to be less common in France than in Britain though other examples occur in Rosnoën hoards (Briard and Giot 1958, pl.V, 12; Briard 1965, fig. 49, 3). The Saint-Just example appears to be identical with the Mildenhall form of the British Lisburn type of Group IV (Burgess 1974, fig. 35, a1) and may be of British origin. Notched dagger with blades in the form of Rosnoën swords are a common type in the Rosnoën phase (Briard and Giot 1958, pls.II, 3; III, 10; IV, 11-12; VI, 15-16; Blanchet and Mohen 1977, 477). The form of the complete Rosnoën sword can be matched in the eponymous hoard (Briard and Giot 1958, pl.IX, 26) and by a sword in Nantes Museum (Briard 1965, fig. 54, 1). The hilt of the other complete

sword in the Saint-Just hoard, 3, is related to Reim's variant G of the Rixheim type (1974a, 20-21) of early Reinecke D (*ibid.*, 43-44; 1974b, Abb. 4). These are swords with a Rixheim blade and a Rosnoën inspired hilt. There are swords with similar hilts whose blade offsets do not reach the notches in the hoards from Les Sauvageons en Henon, Côtes-du-Nord (Briard 1965, fig. 49, 1), and Cannes-Ecluse I, Seine-et-Marne (Gaucher and Robert 1967, fig. 24, 2). These swords all demonstrate overlap between Rosnoën and Rixheim forms. The other two notched hilts, 4-5, appear to be Rosnoën variants (Blanchet and Mohen 1977, 477). The flanged hilt, 6, probably belongs to the Reinecke D Buchloe/Greffern group (List 62, 1).

The palstave and spearheads are characteristic Rosnoën forms (Blanchet and Mohen 1977, 478). The median-winged axe belongs to the eastern French type of Bronze Final I. The pin is related to collared pins, predominantly of Bronze Final I (Audouze and Courtois 1970, 13-15), though the triangular motif occurs on other pins (Nicolas, Duval, Eluère, Mohen and Mordant 1975, fig. 7, 40; Mordant and Prampart 1976, fig. 45, 314). The wheel does not appear to be part of a wheel-headed pin (Blanchet and Mohen 1977, 478; cf. Kubach 1977, Taf. 8-40). Wheel-shaped pendants appeared in south-eastern France in Bronze Final I (Mordant and Prampart 1976, 178; Bocquet 1969, 234-235, fig. 48, 5; Audouze and Courtois 1970, 14-15, pl. 23A, 2-5).

Nothing in the Saint-Just hoard need be later than Bronze Final I/Reinecke D (Blanchet and Mohen 1977, 478-479) and it includes elements from Brittany, eastern France and Britain.

116. Beaugrand, Saint-Léonard, Pas-de-Calais

Mohen 1972, 451, fig. 3, 1; Gaucher and Mohen 1974, 118, Saint-Léonard.

Hoard. Two massive median-winged axes, only one survives.

The surviving axe belongs to the eastern French Bronze Final I group.

117. Seine at La Vaquerie, Vatteville-la-Rue, Seine-Maritime.

Verron 1973, 398, figs. 45, 1; 46.

River find, not certainly a hoard. Described as a lot, rather than dépôt or cachette. Originally several hundred objects, only eighteen survive. Tanged sword with straight blade, broad midrib flanked by double lines; no attachment for rivets, Verron 1973, fig. 45, 1. Three straight-bladed swords with broad midribs and two notches, fig. 46, left. Two straight sword blades. Five daggers with broad midribs and two notches, fig. 46, second left. Seven pegged spearheads, fig. 46, centre, second right. About thirty palstaves from the same spot may belong to this group of objects.

The tanged sword belongs to the Grigny type (List 66, 3) of Reinecke D/HaA1 date. The swords with two notches are related to the Haguenau type (Verron 1973, 397; Gaucher and Mohen 1972, 311). The daggers and spearheads are Rosnoën types, as, presumably, are the palstaves (Verron 1973, 398).

118. Erondelle, Somme.

Millotte, Cordier and Abauzit 1968, 54 nos. 165-167; Gaucher and Mohen 1974, 113, Erondelle 2. Musée de Picardie, Amiens. Fig. 36B.

The nature of this find is uncertain. Gaucher and Mohen (1974, 113, Erondelle 2) record a rapier (List 28, 28, Pont-Remy), a massive looped palstave with trident ornament (Breuil 1905, fig. 5, 43) and twelve winged axes, as well as a winged axe with sub-terminal wings (Gaucher and Mohen 1974, 113, Erondelle 3) in MAN. Millotte, Cordier and Abauzit (1968, 54 nos. 165-167) record a dépôt of three massive median-winged axes, one looped; their drawings appear to represent the axes figures by Breuil (1905, fig. 5, 45-47). Breuil illustrates five winged axes: one with sub-terminal wings and expanded blade (*ibid.*, 44), two median-winged axes, unlooped (*ibid.*, 45-46) and two looped median-winged axes (*ibid.*, 47-48). Amiens Museum contains a palstave, with the number 88, and eleven winged axes, 96-99, 109-114. Only one of the winged axes, 99, is looped and only one, 96, can confidently be identified with one of Breuil's illustrations (*ibid.*, 44). Rosnoen palstave, looped with trident ornament, Amiens Mus. 88. Winged axe, sub-terminal wings, expanded blade, Amiens Mus. 96, Fig. 36B, 1. Median-winged axe, Amiens Mus. 97. Median-winged axe, Amiens Mus. 98. Looped median-winged axe, Amiens Mus. 99, Fig. 36B, 2. Median-winged axe, Amiens Mus. 108, Fig. 36B, 3. Median-winged axe, Amiens Mus. 109, fig. 36B, 4. Median-winged axe, Amiens Mus. 110, Fig. 36B, 5. Median-winged axe, Amiens Mus. 111. Median-winged axe, Amiens Mus. 112. Median-winged axe, Amiens Mus. 113. Median-winged axe, Amiens Mus. 114.

The median-winged axes are all eastern French Bronze Final I forms. The axe with sub-terminal wings is more unusual; there is a similar example from Kraiburg a. Inn, Ldkr. Muhldorf, Bavaria (Müller-Karpe 1959, Taf. 195, 51).

119. Tirancourt, Picquigny, Somme.

Anon, 1905; Gaucher and Mohen 1974, 112, La Chaussée-Tirancourt 1-2.

Doubtful association, not listed as a hoard by Gaucher and Mohen (1974, 123). Enfield spearhead. Pépinville sword.

While these two objects are probably contemporary, the find is hardly 'typical' of the Rosnoën phase (Burgess 1974, 319 n.281) for neither object need be of Breton origin.

120. Choisy-le-Roi, Val-de-Marne.

J.-P. Mohen.

Hoard. Rosnoën sword. Upper part of a rod-tanged sword with straight-sided blade, broad midrib and thick tang. Fragments of the blades of four spearheads. Three Norman palstaves, two with elaborate ribbed ornament, one with V-rib containing pellet.

The rod-tanged sword probably belongs to the Gringy type of Reinecke D/HaA1 date (see p. 107). This hoard provides evidence of overlap between Bronze Moyen III and Bronze Final I types (Verron 1976a, 590).

BELGIUM

121. Bois-de-Lessines, Hainaut.

Mariën 1956.

Find of uncertain nature; Mariën suggests that it represents a female inhumation burial. Pin with ribbed swollen shaft, herring-bone ornament on uppermost rib, trumpet head, Mariën 1956, fig. 3, 1. Upper part of pin, swollen neck with horizontal grooves, trumpet head, b. Two plain penannular bracelets with round sections and slightly tapering terminals, c-d. Penannular twisted bracelet with tapering terminals, e. Penannular bracelet, round section with incised ornament, bands of lines, cruciform motifs, f.

The plain penannular bracelets (List 43, 20) are not chronologically diagnostic. The twisted bracelet (List 44, 7) can be dated with more precision. Twisted bracelets occur in late Tumulus and early Urnfield contexts in Hesse (Richter 1970, 127-129); there are two examples with tapering terminals in the Reinecke D burial from Nenzingen, Baden (Cowen 1955, Abb. 2; Schauer 1971, 135). Twisted bracelets appeared in eastern France at the end of Bronze Moyen (Sandars 1957, 89, fig. 21, 3), but they only became common during Bronze Final I (Nicolas, Duval, Eluère, Mohen and Mordant 1975, 159) and Gaucher illustrates a twisted bracelet with rolled terminals as characteristic of his Saint-Gervais group of Bronze Final I (1976, fig. 3, 9). Twisted bracelets, possibly residual, occur in the Bronze Final II hoards from Longueville (Lamarre 1945, fig. 4, 35-37) and Cannes-Ecluse I (Gaucher and Robert 1967, 192, fig. 31), Seine-et-Marne (see p. 88), and in the Bronze Final II burial at Champbertrand, Yonne (Sandars 1957, 161-162, fig. 36, 3-5, pl. VIII, 3-5; Nicolas, Duval, Eluère, Mohen and Mordant 1975, 159). The decorated bracelet (List 94, 3) is probably related to the Reinecke D Nieder-Flörsheim type (Richter 1970, 107-111), cf. the examples in the Anzin hoard (114). The trumpet-headed pins with swollen necks belong to the earlier part of LBA1 (see p. 120) and this date is probable for the Bois-de-Lessines hoard.

122. Neeroeteren, Maaseik, Limburg.

Mariën 1952, 219, 226,afb. 199, 1; Desittere 1974a, 118, Liste 2, 11.

Probable hoard. Four massive median-winged axes.
The axes belong to the massive eastern French type of Bronze Final I.

123. Dave, Namur.

Mariën 1952, 269, afb. 253.

Hoard. Four cast twisted neck-rings with tapering terminals, ornamented in one case.

A date at the beginning of the Late Bronze Age is usually favoured for this hoard (de Laet 1974, 352). If the neck-rings were derived from central Germany, a late LBA1 date is probable (see p. 80).

124.

124. Grand-Gard, Han-sur-Lesse, Namur.

Mariën 1961, 29; Knapen-Lescrenier 1970, 127; de Laet 1974, 368-369; Desittere 1976, 84 no. 10.

Inhumation burial in a marchet (stone-built barrow) among a group of such monuments on the Grand-Gard plateau.

Excavation in 1861 produced a twisted neck-ring. In the Musée Archéologique, Namur, there are several fragments of a cast twisted neck-ring with ornamented tapering terminals; this neck-ring is labelled 'Han-sur-Lesse'. If it is to be identified with the Grand-Gard find, it should be contemporary with the Dave neck-rings (123).

NETHERLANDS

125. Veenenburg, S. Holland

Butler 1959, 134-136, fig. 4.

Hoard. Pin, stepped head, incised ornament on shaft, Butler 1959, fig. 4, a. Pin, biconical head, ribbed with flat top, incised ornament on shaft, b. Pin, biconical head, ribbed with flat top, incised ornament on shaft, c. Two fragments of sickle blades with single knob and double rib, d-e. Five plain penannular bracelets, f-j. Plain penannular bracelet onto which are threaded thirteen annular rings, k. Tanged tool with triangular blade, l. Polished stone axe, m. Flanged axe, different patina from the other bronzes, n.

A polished stone axe occurs in another Dutch bronze hoard at Wageningen, Gelderland (Inv. Arch. NL11, 9). The flanged axe may be from the same hoard as the example in the Voorhout hoard (85) 2; the form is distinct from the Ekehaar and Vlagtwedde types (Butler 1963b, 192-198). The form of the tanged tool is similar to that of leather-working knives (see p.137-8). The sickles are probably of continental origin (see p. 63). The bracelets (List 43, 22) are undiagnostic, like the rings (List 47, 17). The incised ornament on the shafts of the Veenenburg pins matches that on the shaft from Laren (list 85, 1). Such ornament occurs on a pin with a stepped head from Beckedorf, Kr. Celle (Laux 1976, 75 no. 406) and on a biconical-headed pin from Gollern, Kr. Uelzen (*ibid.*, 83 no. 452), Lower Saxony. Both of these pins come from early MIII burials (*ibid.*, 76, 83), so an early LBA1 date is likely for the Veenenburg hoard.

126. Hillenraad, Swalmen, Limburg.

Lanting and van der Waals 1974, 69-74, figs. 30-32.

A group of four barrows, adjacent to the German border, was originally excavated by F. C. Bursch in 1937; barrows 1 and 2 were re-examined by Lanting and van der Waals in 1972.

Barrow 1 contained sherds of a Middle Bronze Age urn above its centre; a massive median-winged axe (Lanting and van der Waals 1974, fig. 31, 47) and a whetstone were found in a peripheral secondary position.

Barrow 2 contained a central inhumation; two massive median-winged axes (ibid., fig. 31, BM 247, Hillenraad) were found in a peripheral secondary position.

Barrow 3 contained Middle Bronze Age sherds and there were no diagnostic finds from Barrow 4.

The axes belong to the eastern French type of Bronze Final I.

BRITAIN

127. Isleham, Cambs.

Britton 1960; Coombs 1975a, figs. 5; 8, 4-11; 9, 6-14; 10, 10-34; Edwardson n.d.; D. Britton. Moyses Hall Museum, Bury St. Edmunds. Figs. 42-46A.

Hoard, found in a pit cut into the chalk at the fen edge. Several fragments of pottery were also recovered. Over 6,500 fragments, weighing nearly 200 lb (c. 90 kg), make this the largest Bronze Age hoard known from Britain and it is larger than any hoard from western or northern Europe. Most of the objects have been broken into small fragments and the total numbers represented of certain types are approximate.

296 fragments of swords in pieces up to 15 cm in length. Three complete weapons have been reconstructed. Sword, hilt broken and repaired in antiquity. Oval-section blade with bevelled edges and ricasso; slightly convex shoulders with two slots; slotted grip. The grip was broken at the base of the slot. To facilitate repair, grooves were cut on either side of the hilt, running upwards from the shoulder slots. This was presumably intended to afford more secure attachment for the new metal which was cast on, but the repair was not secure and the break re-opened, Fig. 42, 1. Sword with oval-section blade with bevelled edges and ricasso; almost straight shoulders with two rivets set in elongated depressions; slotted grip, Fig. 42, 2. Sword with broad midrib on the blade which has bevelled edges and quintuple outlines ending in pointillé which also outlines the ricasso; almost straight shoulders with four rivet-holes; slotted grip, Fig. 42, 3. Slotted grips are usual, but a few fragments have rivet-holes (Coombs 1975a, fig. 9, 8-9) and one combines a slot with three rivet-holes (*ibid.*, fig. 9, 10). Shoulders are straight or slightly convex with two slots or two, four or six rivet-holes. Blades have either oval sections or lozenge-sections with midrib. Multiple outlines sometimes occur (*ibid.*, fig. 9, 13-14). Many rivets for swords and some lengths of bronze suitable for cutting into rivets. Some of these may be fragments of plain bracelets (Britton 1960, 281 n.24). 1764 fragments of lozenge-section chapes, but only one complete example, with concave mouth, ribs and knobbed terminal, Fig. 43, 4. Forty-six fragments of tubular ferrules. c. 420 fragments of spearheads; all the examples which can be reconstructed have leaf-shaped blades and, save one unfinished casting, peg-holes. Seventeen are now complete. Seven of these have solid blades, including the six smallest examples from 10.2 cm, 5-8. Ten have hollow blades, five with a midrib, 9. One with a midrib and step, 10. Four with lozenge-section blades, 11. Some fragments have lunate openings of fillet-defined midribs and one example combines both features, 12. Most spearhead blades have bevelled edges. Some blades bear pointillé ornament (Coombs

1975a, 60, fig. 8, 4-6, 8); others have bands of incised lines and triangular motifs at the mouth (*ibid.*, fig. 8, 7, 9-11), 13. Twenty-eight fragments of palstaves including five complete or near-complete examples, all looped with low flanges and projecting stop-ridges. Two plain, 14-15. One with double vertical groove ornament, 16. One with multiple V-groove ornament, 17. One with tapering rib, 18. One fragment of a bronze palstave mould. Six socketed axes, all looped. One plain with triple collar moulding, 19. Five indented, one with triple spaced ribs on the collar, 20. One with no collar moulding, 21. Twelve fragments of socketed gouges, 22. Ten socketed hammers, complete or fragmentary. Two forms are represented, first, a short broad form, 23. Second, a longer, more slender, form with the striking end differentiated from the socket, 24. One unfinished object; a shield-shaped blade tapering to a tang whose expanded terminal could be a casting jet, 25. One ring-socketed sickle and several fragments, 26. One tool with a tapering blade, solid and of concavo-convex section, and a hollow socket of semi-circular section, 27. One tip of a chisel blade, 28. Three blocks of bronze with multiple perforations which taper slightly and measure between 1.0 mm, and 4.0 mm in diameter, 29. Two fragments of single-edged knives. Forty-nine fragments of double-edged tanged knives and two complete examples. One with two notches, 30. One with a ribbed tang, 31. One fragment of a double-edged socketed knife, the junction between the socket and the blade, 32. Five 'hub-caps' with convex tops and cylindrical sockets. Two examples without peripheral flanges appear to be a pair, Fig. 45, 34. Two others have peripheral flanges, 35. One smaller cylindrical socket with expanded top, 36. Two joining fragments of bronze rod of circular section; one terminal expands to a trumpet shape with an irregular central projection, the other terminal expands to a convex form. With a socket out of which another piece, the same diameter as the rod, appears to have been broken, 37-38. One short bar with expanded terminals and a central slot, 39. One annular ring, C-section with two loops beneath, 40. Seven annular hollow rings with four slots, 41. Four cruciform objects with slots at the end of each arm; the lower sides have circular perforations and the upper sides are stepped, dome-shaped, 42. One annular ring, worn on one side, with a hooked appendage, 43. Three triangular openwork mounts with a central bar and loops at each apex on the lower side; the upper sides decorated with grooves and notches, 44-45. Fragments of three 'cheek-pieces'; curved bars, the single surviving terminal knobbed, a loop in the plane of the curve on the concave side, the loop flanked by two slots in the same plane. Hollow-cast with clay cores, 46. Two of these fragments are of almost identical size and their perforations form the same angle; they may be a pair, 47-48. Fourteen openwork pieces, one end stragith and open, the other curved and perforated by a small slot, 49. One rectangular openwork piece, one end perforated by a small slot, the other end apparently open, each side perforated by a single hole at the open end; the upper side bears grooved ornament and there are remains of diagonal

central bars, 50. One unfinished casting of a semi-circular open-work piece, hollow, the remains of a slot in the convex side, a hole at one angle, a projecting terminal; grooved ornament, 51. One large toothed object, a hollow bar with a central slot, a rib on the underside of each tooth. Oblique moulded ornament on the bar, grooved ornament on the teeth, 52. One terminal of a hollow C-shaped object. Coombs 1975a, fig. 10, 11. One D-shaped object with a D-section bar bearing transverse line ornament; the rough underside of this bar bears the remains of a projection at either end, 53. Three double loops of unequal size with a collar, moulded on the side of the larger loop, rough on the side of the smaller, 54. One oval piece with an angular loop. Coombs 1975a, fig. 10, 24. Three tanged studs with square grooved heads. Forty-five convex looped buttons, Fig. 46A, 55. Tanged studs with convex or conical heads. (Coombs 1975a, fig. 10, 25-27). Eighteen complete or near-complete phalerae, centres defined by a step, rims thickened, loops cast in one, 56. Thirty-seven fragments of phalerae. One shallow cup-shaped object, circular with slightly tapering sides, ribbed and perforated by two rivet-holes, 57. One similar object with upright sides. Twenty-two rolls of sheet bronze, many pinched at one end, some fragments may join. One terminal. A hollow annular ring with a central rivet holding a bar; one end of this bar appears to be broken, the other has a cylindrical socket which holds a solid annular ring which is very worn in part of its circumference, 58. One fragment of a penannular bracelet with longitudinal notched ribs, tapering towards the terminal, 59. One fragment of a bracelet with a longitudinal groove containing transverse incised lines; part of a broken ring at one end, 60. Two fragments of narrow bracelets with a broad longitudinal rib flanked by two peripheral ribs, notched in one case, 61-62. Head of a pin, small ribbed head of conical form, 63. Head of a pin, broad carinated head with inset top, 64. Four cauldron rings of identical diameter and section, one attached to a three-ribbed staple. (Edwardson n.d., pl. V, 10). Another three-ribbed cauldron staple. (*Ibid.*). Fragments of sheet bronze with flat-headed rivets. Two additional ring handles and five additional staples. Eleven terminals, some with bulbous ends, other with hammer-head ends, Fig. 44, 33. 2624 fragments of bronze plate with spaced narrow ribs or multiple broad ribs. Fifty-three pieces of casting debris.

The swords are all LBA2 types; Burgess' claim (1968a, 37) that the Isleham hoard contains a fragment of Carp's Tongue sword is incorrect (D. Britton). The decorated spearhead blades in the Isleham hoard are unique in contemporary British hoards (Coombs 1975a, 60). Britton has described the tool with a tapering blade (27) as 'a possible reamer' (1960, 281), i.e. a tool for enlarging holes bored in wood. This unusual tool can be matched by another from the Thames, possibly at Mortlake, Surrey (Museum of London A 28; Fig. 52, 1). Some of the bone implements from the Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 121-145) may be related.

The blocks with perforations (28-29) are similar to drawplates for wire-drawing (Mayron 1971, 41; Lindblom 1939). The Isleham hoard contains no implement to grip the wire and some alternative to a modern pair of pliers would have been needed. An object in the LBA1 hoard from Bishopsland, Co. Kildare, may have served such a purpose (Eogan 1964, 340 no. 40, 12, fig. 5, 12) and the same hoard also contains lengths of bronze wire (*ibid.*, 340 no. 40, 20), though it has not been ascertained whether this was drawn. Gold wire was used during the Irish Late Bronze Age for the manufacture of lock-rings (Eogan 1969, 103). The hoard from Derrinboy, Co. Offaly, contained a necklet of gold wire on a leather core; this wire, of D-section 1.0 mm wide and 0.5 mm thick, was 15-25 m in length (Raftery 1961, 56-57). Eogan placed the Derrinboy hoard in the Bishopsland phase, LBA1 (1964, 343 no. 57). Middle Bronze Age hoards from Barton Bendish, Norfolk (Inv. Arch. GB7, 5), Monkswood, Somerset (Inv. Arch. GB42, 10-11), and Taunton Union Workhouse, Somerset (Inv. Arch. GB43, 13), and Late Bronze Age finds from Llangwyllog, Anglesey (Lynch 1971, fig. 68, 3), and the Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 6), all contain ornaments of wire *c.* 2 mm thick, which indicates that bronze wire was manufactured from the Middle Bronze Age (Rowlands 1976, 16). There appears to be no evidence for wire in Wilburton hoards.

The fragments of single-edged knives are undiagnostic. Some of the double-edged tanged knives could be re-used sword blades. The fragmentary socketed knife belongs to the Thorndon type (Hodges 1956, 38).

The diameters of the sockets of the 'hub-caps', *c.* 13.6 cm, match the diameter of the trumpet-shaped terminal of the bronze rod (37). These could be associated parts of a wheeled vehicle (see p.150).

The slotted bar (39) has been identified by Burgess (1968a, 37 n.23) as part of a two-piece bugle-shaped object, but the slot in the Isleham object 1.0 cm x 0.3 cm, seems to be too small, for the slots in 'slotted reels' are between 2.5 cm and 3.0 cm long (see p.194). The Isleham object may be a simple toggle.

The looped annular ring (40) can be matched in the Wilburton hoard (129). The Isleham cruciform objects (42) may be compared with those from Wilburton, which have central perforations on both upper and lower sides. The terminal (Coombs 1975a, fig. 10, 11) is probably part of a cheek-piece represented in the Wilburton hoard by an almost complete example (24). The form and dimensions of the Isleham openwork pieces (49) are similar to those of an openwork piece from Wilburton (25). The cruciform objects and slotted rings may be interpreted as strap-crossings. The unfinished openwork casting from Isleham (51) could be a cheek-piece like the Wilburton example (24). The openwork objects with grooved ornament may be related to an L-shaped fragment with similar ornament in a burial from Weert, Dutch Limburg, associated with a small *Kerbschnitt* cup and bronze fragments. Charcoal from the cremated remains gave a C14 date of: 800 ± 50 b.c. GrN 6871 (Lanting 1976, 58-59, Abb. 2A). The *Kerbschnitt* pot should not be dated before the beginning of Ha B (Desittere 1968, 45-50; Kimmig 1970, 45), though Lanting has suggested the possibility of an earlier origin (1976, 60-61).

The objects discussed in the previous three paragraphs could all be interpreted as elements of horse or wagon equipment (Britton 1960, 282; Coombs 1975a, 62-64, fig. 10). The Isleham phalerae may also constitute horse-gear, though the alternative interpretation of related central German phalerae as personal ornaments (O'Connor 1975, 223) should be recalled. Britton has suggested that the double loops (54) may be terrets (1960, 282). In addition to the various studs and buttons, the hooked ring (43), the toothed object (52), the D-shaped object (53), the looped oval (Coombs 1975a, fig. 10, 24) and the small socket (36) could all be fittings for horses or wagons. The complex terminal (58) is similar to a strap terminal in the wagon burial of the later Hunsrück-Eifel culture from Sitzerath, Kr. St. Wendel, Saarland (Kolling 1975, 28-29, Abb. 6, 1). The cup-shaped objects (57) may be compared with an oval piece in the Bronze Final III hoard from Crapon en Planguenoual, Côtes-du-Nord (Briard, Le Roux and Onnée 1973, 47, fig. 5, 72).

The ribbed bracelet is probably a survival from the Middle Bronze Age (List 42, 1) though ribbed bracelets occur in Late Bronze Age contexts in France, e.g. the Larnaud hoard, Jura (Chantre 1875, pl. XLIX, 6). Britton has suggested that the fragment with a broken ring (60) is part of a Nordic Armring mit kreisformiger Erweiterung (1960, 281). These bracelets occur mainly in Denmark, also in southern Sweden and northern Germany, and they are dated to MV (Baudou 1960, 68, 259; Sprockhoff 1953). Raftery has shown that a small group of Irish bracelets was derived from this Nordic type (1971, 96-99). None of these Nordic or Irish bracelets appears to have the longitudinal groove present on the Isleham fragment.

The pin with a small conical head (63) probably belongs to the Landau form, cf. the example from the Rhine at Mainz, which has a head of similar diameter, c. 0.55 cm (Kubach 1977, 467 no. 1157). Landau pins are of middle Rhine origin and Ha A2 date (ibid., 469-470) so the Isleham pin could have been imported during the later part of LBA1 (see p. 126). The second pin (64) appears to belong to an ill-defined group of disc-headed pins with insets (see p. 205).

The identifiable cauldron fragments belong to Class A1 (D. Britton); more than one vessel is represented.

Jockenhövel appears to include all the terminals with bulbous and hammer-head ends in his list of flesh-hook terminals (1974a, 330 no. 15). The examples with bulbous ends can be matched in the Wilburton hoard (129), but the hammer-head form (33) is unusual.

Plate scrap also occurs in the hoards from Guilsfield (131) and Co. Roscommon (Davies 1967, 104 n.5; Burgess 1968a, 37, fig. 9, 10; Eogan 1964, 346, no.64, 23).

The sherds of pottery associated with the hoard are of coarse gritty fabric and probably belong to a single vessel. No fragments of the base were preserved and only two of the rim; one end of a loop handle survives. The reconstruction of the vessel in Bury St. Edmunds Museum seems speculative.

128. Wicken Fen, Cambs.

BM 68, 8. 15. Fig. 46B.

Hoard. Five sword fragments of at least two weapons including a hilt fragment. The blade has a broad midrib and quadruple outlines with pointillé; there is a ricasso. The straight shoulders have four rivet-holes; there are two rivets, one hollow, the other with a clay core. The base of the hilt is marked by a ridge, notched along some of its length. The grip was probably slotted, Fig. 46B, 1. Fragments of a lozenge-section chape, a tubular ferrule and a spearhead. The sword hilt can be matched by a fragment from the Isleham hoard (Coombs 1975a, fig. 9, 13) which has straight shoulders, four rivet-holes, a concave hilt-mark, a broad midrib and multiple outlines, but no pointillé.

129. Wilburton, Fen, Cambs.

Evans 1885. CMAE 1919-6; some spearheads in Bolton Museum. Figs. 46C - 49A.

Hoard, some of the objects were damaged by fire about the time that they were found. Eleven sword hilts, all with slotted grips and ricassi. Shoulders may be straight or slightly convex with two or four rivet-holes of varying sizes, Fig. 46C, 1-4. Coombs 1975a, fig. 9, 1, 4-5. All sword blades appear to have a broad midrib and bevelled edges, Fig. 47, 5. One complete lozenge-section chape with concave mouth, ribs and knobbed terminal. Three terminals of lozenge-section chapes, two knobbed, one plain. Eighty-seven spearheads, complete or near complete, and twenty-eight fragments; all pegged where evidence of attachment remains. Most blades have bevelled edges. Ninety-two have a solid blade; ten have a hollow blade, 7-10. Five have lunate openings, 11-13. One has small circular openings, Fig. 48, 14. Five have fillet-defined midribs, 15. Some examples have stepped blades, 16. One complete tubular ferrule and five fragments, 17-18. One looped palstave with low flanges, projecting stop-ridge and double groove ornament, 19. One indented socketed axe, 21. One plain socketed axe, 20. One blade of a leather-working knife, 22. One 'hub-cap' with convex top, peripheral flange and slightly conical socket, 23. One C-shaped object, hollow-cast, rectangular section; the two terminals are open and expanded, perforated by two holes. There is a slot at the apex in the same plane as these holes and the remains of another slot in the convex side of the apex. Grooved ornament. Remains of a clay core, 24. One openwork object; one end is straight and open, the other is curved with a slot, 25. One hollow bar with closed ends and three slots, 26. One cruciform object with slots at the end of each arm; central circular perforation, 27. One annular ring, C-section with two loops beneath. A fragment of another, Fig. 49A, 28. Two annular hollow rings with four flots, 29. One slotted object with upturned knobbed terminals, 30. Four solid annular rings. One double-edged tanged knife with a single notch in the tang. Three terminals with bulbous ends, 31.

The looped annular rings (28), the slotted annular rings (29), the 'hub-cap' (23), the C-shaped object (24), the openwork object (25) and the cruciform strap-crossing (27) can all be matched in the Isleham hoard (127). The terminals with bulbous ends (31) are flesh-hook terminals (Jockenhövel 1974a, 329 no.s 6-8, Abb. 1, 6-8) which can also be matched at Isleham.

130. Andover, Hants.

Dale 1913-14. City Museum, Winchester. Fig. 49B.

Hoard. Fragments of at least two sword including two hilts. Hilt with slotted grip, straight shoulders, four rivet-holes; oval blade section with bevelled edges and ricasso, Fig. 49B, 1. Hilt with straight shoulders and four rivet-holes, two not completely perforated. As one rivet-hole contains a rivet, these two holes were marked out but not subsequently used. Broad midrib and ricasso on blade, 2. Fragments of six spearheads, of lozenge-section chapes and tubular ferrules.

131. Guildsfield, Montgomeryshire.

Savory 1964-66; Davies 1967.

Hoard. Six sword fragments. One slotted grip. Savory 1964-66, fig. 5, 8. Four blade fragments with broad midrib and bevelled edges, fig. 5, 7, 9, 11-12. One corroded blade fragment, oval section, fig. 5, 10. Complete or fragmentary examples of twenty-two tongue-shaped lozenge-section chapes with concave mouths, figs. 5, 1-5; 6; 7, 1-4; 23. One short lozenge-section chape with straight base, fig. 5, 6. Complete or fragmentary examples of fifteen tubular ferrules, fig. 4. Nine complete or near-complete spearheads, seven fragment and one miscast piece. All have hollow or partly hollow blades, most with bevelled edges. Two have lunate openings. One has pointillé ornament on the socket, figs. 2-3, 7, 22. Fragments of ten palstaves, where these features remain all are looped with low flanges and projecting stop-ridges, fig. 1B. Two socketed gouges, fig. 7, 5-6. One rivet with convex head, fig. 7, 7. Fragments of bronze plate with spaced ribs, fig. 7, 9-21.

Casting jet, fig. 7, 24. Copper cake, fig. 7, 25-38.

Two socketed axes and a fragment of another probably belong to the hoard (Davies 1967, 96, fig. 1, i-k; Burgess 1968b, 15 n.63, fig. 11, 5; Savory 1964-66, figs. 1, 5; 7, 8). These are all looped with multiple collar-mouldings, including rope-moulding on one example. Davies has pointed out that the sword fragments are not sufficiently complete to be certainly identified as Wilburton swords (1967, 103), but all could belong to this type.

The straight-based chape has been compared with the chape in the hoard from Stoke Ferry, Norfolk (Inv. Arch. GB8, 3), by Davies (1967, 103) but the Stoke Ferry chape has neither the concave mouth, nor the lozenge section, of the small Guildsfield chape. Comparison has also been made with short tongue-shaped chapes in the Isleham hoard (127) (Burgess, Coombs and Davies 1972, 218-219), though the Isleham hoard

does not appear to contain any straight-based chape. While short chapes are common only during LBA3 (*ibid.*, 219), the form of the Guilsfield chape suggests that it is no more than a LBA2 chape with a straight base.

The so-called 'rivet' may be a tanged stud, cf. the examples in the Isleham hoard (127). The socketed grouges and ribbed plate can be matched in the same hoard.

The multiple collar-mouldings of the socketed axes can be matched on axes in the Isleham (127) and Wilburton (129) hoards, though the Guilsfield axes are shorter and may be matched in northern England (Burgess 1968b, 14-15, fig. 11). The hoard from Ulleskelf, Yorks. (*ibid.*, 65 no. 4, fig. 21, 4) provides a LBA2 context. The example said to be from the R. Ribble (*ibid.*, 64 no. 3, fig. 21, 2) is probably not from an associated find (Davey and Forster 1975, no. 157). The rope-moulding on one of the Guilsfield axes is considered to be an Irish feature by Davies (1967, 99), present on an axe in the LBA1 Bishopsland hoard (Eogan 1964, fig. 5, 2). There is an axe of the same general form as the Guilsfield axes with cord-moulding from Danes Dyke, Flamborough, Yorks. (Burgess 1968b, 61, no. 10, fig. 11, 6), and there are rope-moulded axes in the LBA2 hoards from Wallington and Haydon Bridge, Northumberland (*ibid.*, figs. 7, 5; 9, 10).

NORTH-EASTERN FRANCE

132. Boutigny I, Pasloup, Essonne

Cowen 1955, 88, 140 no. 12, Abb. 10.

Hoard. One looped end-winged axe, Cowen 1955, Abb. 10, 1.

One indented socketed axe, looped with collar-moulding, 2. One pegged spearhead, 3. One fragmentary sword hilt; blade has mid-rib and ricasso flanked triple lines of dashes and triple lines of semi-circles; flanged-hilt, straight shoulders with two rivet-holes, swollen grip with notched flanges, 4. Two other sword fragments. Part of single-edged knife with slightly convex back and plain tang, 5. One pin-head; disc with swollen centre and radiating ornament, 6. One rectangular box, long side open, grooved and bossed ornament, 7. Two fragments of sheet bronze with rolled rims and bossed ornament, 8-9.

The sword was included by Cowen (1955, 138-140) in his Early Decorated type of date Ha A and Ha B and he dated the hoard to Ha B (*ibid.*, 88). In Schauer's typology, the Boutigny I sword appears to be related to the Ha B1 Säckingen and Locras types (1971, 173, 176-179). The knife (List 55, 4) is not a diagnostic form; knives with plain tangs are not closely datable in France (Nicolardot and Gaucher 1975, 55). Hencken doubts that the sheet bronze fragments belong to helmets (1971, 183). Such fragments could possibly be from greaves; whatever the identification these fragments provide further evidence of the use of sheet bronze objects in northern France (see p. 117-9).

133. Boutigny II, La Justice, Essonne.

J.-P. Mohen.

Hoard. Two palstaves. Fragments of two winged axes. Fragment of a socketed axe. Hilt of an Atlantic leaf-shaped sword. Various fragments of sword blades. Two lozenge-section chapes. Various spearhead fragments. One tubular ferrule. One socketed gouge. One sickle fragment. Two terminals. One tanged single-edged knife. Two razors. One spiral. One fragment of a decorated bracelet. A decorated sword blade fragment could belong to the Ha B1 Locras type or to a related type (see p. 142). The decorated bracelet (Eluère 1976) appears to belong to the Ha B1 Pfeddersheim type and was probably made in Hesse (Richter 1970, 146-149). This provides an important chronological indicator for Atlantic Bronze Final II types, axes, swords, hapes and ferrules. The Boutigny spiral can be matched in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 13, pl. XIII, 101-108). One of the terminals may be from a flesh-hook.

134. Champcueil. Essonne.

J.-P. Mohen.

Hoard. One hilt of an Atlantic leaf-shaped sword. One blade fragment of a sword, oval section with offset edges. One fragment of a winged axe. One leather-working knife. Six convex looped buttons. The leather-working knife is presumably the example illustrated by Nicolardot and Gaucher (1975, 111, fig. 3) and de Mortillet (1903, pl. LXXXII, 988) and listed by Roth (1974, 47). The buttons can be matched in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 15, pl. XV, 121).

135. Seine between Morsang and Saintry, Essonne.

Toulouse, 1891, 171, figs. 35, 72-74.

Group of bronzes, most fragmentary and melted. Contents include swords, spearheads and a winged axe. This may be a hoard of Bronze Final II, cf. the Seine at Paris hoard (138).

136. Fort-Harrouard, Eure-et-Loir.

Philippe 1936, fig. 51.

Hoard, contents include: One hilt of an Atlantic leaf-shaped sword, four rivet-holes in the shoulders, Philippe 1936, fig. 51, 21. Nine sword blade fragments, 1-6, 14, 17, 19. One looped palstave, 20. One kidney-shaped bracelet, 12. One penannular bracelet, 24. One annular ring, 27. One ? pin shaft, 11. The kidney-shaped bracelet is a typologically early example (Eluère 1975, 25, fig. 1), probably derived from the Ha A2 Hassloch type (Richter 1970, 142-143).

137. Pontpoint, Oise.

J.-Cl. Blanchet.

Hoard. One unlooped Norman palstave. One kidney-shaped bracelet with four triple protrusions. One hilt of Atlantic leaf-shaped sword. Two lozenge-section chapes. One socketed gouge. Two spearheads. One winged axe. Two socketed axes with shouldered blades. Briard and Verron 1976b, 75-76, fig. 1. One socketed adze with shouldered blade. *Ibid.*, 86, fig. 3. One tube. One socketed shaft. Three casting jets.

Blanchet dates this hoard to Bronze Final III (1976a, 42) but a Bronze Final II date seems possible. The palstave is residual and the sword, chape and gouge could all be Bronze Final II. The bracelet can be matched in the Fort-Harrouard (136) hoard. Typological considerations suggest that the shouldered axes and adze could be of LBA2 date (see p. 135).

138. Seine at Paris.

Ash 1927. 2247-2265. Fig. 50.

Hoard. Fragment of Atlantic leaf-shaped sword, broad midrib, single outline, slightly convex shoulders, four rivet holes, Fig. 50, 1. Fragment of Atlantic leaf-shaped sword, broad midrib, slightly convex shoulders, four rivet-holes, slotted grip, 2. A similar fragment. Fragment of Atlantic leaf-shaped sword, midrib, single outline, convex shoulders with four rivet-holes, rivet-hole in grip, 3. Fragment of Atlantic leaf-shaped sword, midrib, convex shoulders, four rivet-holes, rivet-holes in grip, 4. Fragments of two Atlantic leaf-shaped swords, both with four rivets in shoulders. Point of sword blade, single outline. Point of sword blade, plain. Point of sword blade, single outline. Point of sword blade, quintuple outline, 5. Point of sword blade, plain. Point of sword blade, single outline. Eleven fragment of sword blades. More or less complete examples of eleven spearheads; where these features survive, all have solid blades and peg-holes. In one case bronze pegs survive, 6-8. Ten fragments of spearheads. Five fragments of tubular ferrules, including two terminals, 9-10. One looped winged axe, 11. Fragment of an unlooped winged axe, 12. One casting jet, 13. Five pieces of solidified molten metal, apparently melted bronze rather than copper ingot.

139. Canteleu, Biessard, Seine-Maritime.

Deglatigny 1924, 33-34, pl. VII-IX; Verron 1971, 59-61, figs. 30-36. Musée Départemental des Antiquités de la Seine-Maritime, Rouen. Fig. 49C.

Hoard. Fifty-seven fragment of sword blades; some have midribs, which may be outlined, others have oval sections. Some of these fragments are re-used: (Verron 1971, figs. 30a-c; 1976a, fig. 3, 18). Three fragments of spearheads. Twelve fragments or complete examples of palstaves, one massive, unlooped, six looped. (Verron 1971, fig. 33); Fig. 49C, 1-2. Two fragments of lozenge-

section chapes. (Verron 1976a, fig. 3, 12). One 'hub-cap', flange damaged. Fig. 49C, 3. One 'bobbin', assymmetrical with double constriction. (Verron 1971, fig. 35). Casting debris and ribbed plate. (Verron 1976a, fig. 3, 16-17).

The 'hub-cap' can be matched in the Isleham (127) and Wilburton (129) hoards. The bobbin can be matched in the Saint-Brieuc-des-Iffs hoard (Briard and Onnée 1972, 14, pl. XIV, 109-112). J. D. Cowen (Card Index) had identified some of the sword blade fragments as parts of Carp's Tongue swords but Verron's Bronze Final II date for the hoard (1971, 59; 1976a, 592) seems to contradict this. The ribbed plate appears to be similar to that in the Isleham (127) and Guilsfield (131) hoards.

140. Caix, Somme.

Gaucher and Mohen 1974, 53-57, 111, Caix, ill. 32-34.

Hoard. One Picardy pin. Gaucher and Mohen 1974, ill. 32. One head of a pin, decorated disc head, ribbed shaft. Breuil 1907, fig. 1, 14. Five winged axes, three looped, two unlooped. Breuil 1905, fig. 5, 49-53; Gaucher and Mohen 1974, ill. 33. One grip of Atlantic leaf-shaped sword with three rivet-holes. Gaucher and Mohen 1974, ill. 34. One hilt of Atlantic leaf-shaped sword with straight shoulders, four rivet-holes, slotted grip. *Ibid.* Several lozenge-shaped chapes. Breuil 1900, fig. 6, 72-73; Gaucher and Mohen 1974, ill. 34. Three complete tubular ferrules and another fragment. Breuil 1903, fig. 7, 1-3; Gaucher and Mohen 1974, ill. 34. One sickle fragment. Breuil 1901, fig. 4, 34. Tip of chisel blade. Breuil 1902, fig. 2, 8. One cast perforated disc. Gaucher and Mohen 1974, ill. 34. One triple ring. *Ibid.* One perforated lozenge-shaped 'ingot'. *Ibid.* Miscellaneous fragments. Breuil 1902, fig. 2, 5-6, 1907, fig. 9, 3-5. Gaucher appears to attribute to the Caix hoard a pin with globular head and ribbed shaft (1976, fig. 5, 6).

The 'ingot' can be compared to examples from south-eastern France in the hoards from Goncelin, Isère, and Albertville, Savoie (Bocquet 1969, 273-274, fig. 65, 6; 1976, 490, fig. 4, 13). Bocquet dates these hoards to his middle phase of Bronze Final, i.e. IIb or IIIa (1976, 490), compatible with a Bronze Final II date for the piece in the Caix hoard.

141. Luzarches, Val-d'Oise.

Hahn 1878, J.-P. Mohen.

Hoard. Two looped palstaves. Hahn 1878, figs. 1-2. Fifteen fragments of palstaves. Three fragments of winged axes. Millotte, Cordier and Abouzit 1968, 54 no. 160. Five fragments of spearheads. Thirty fragments of swords. Hahn 1878, fig. 6. Fragment of dagger or knife. Ten fragments of lozenge-section chapes. Hahn 1878, figs. 7, 9. One socket with expanded stepped top. Hahn 1878, fig. 5. One fragment of sheet bronze. One ring. Various other fragments of bronze and casting debris. One worked flint. Hahn 1878, fig. 8.

The socket may be compared with a similar piece in the Bronze Final III hoard from Amboise, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 4, 46), but it could be related to the 'hub-caps' in the Isleham (127), Wilburton (129) and Canteleu (139) hoards.

BELGIUM

142. Pulle, Antwerp.

Van Impe 1973.

Group of bronzes, only the fragments of swords found together (van Impe 1973, 5 n. 3). Point of sword blade and an adjoining fragment which has been partly melted; oval section, triple outlines. Van Impe 1973, pl. I, 1. Fragment of sword blade, midrib, quintuple outlines. pl. I, 2. Two adjoining fragments of a sword blade, the point has been melted. Sextuple outlines, midrib. pl. II, 3. Point of sword, midrib, quintuple outlines. pl. III, 4. Fragment of sword blade, midrib with spaced quadruple outlines. pl. III, 5. Eight spearheads, all pegged with solid blades. pls. IV-VII. Looped socketed axe with plastic wing ornament. pl. III, 6.

Van Impe (1973, 10-11) and Desittere (1976, 90) regard the sword fragments as Atlantic, though multiple outlines occur on the blades of contemporary central European swords of Mainz type (Schauer 1971, 171). The spearheads are not diagnostic. The axe belongs to the Lower Meuse type of LBA3 (List 126, 1).

NETHERLANDS

143. Bargeroosterveld 1899, Drenthe.

Butler 1960a, 108-110, 123, fig. 50; 1960b, 211-214.

Hoard, entered in the inventory of Assen Museum in 1899. One single-edged knife with convex back and plain, rectangular-section, tang.

One razor, double-edged blade very worn, lozenge-shaped openwork handle with ring terminal.

The knife is probably related to the large group of tanged knives of Stillfried type of Ha A2, Ha B1 and later (Rihovský 1972, 55-58). The form of the handle of the razor can be matched locally by the razor from Weerdinger Weg (List 119, 4). Jockenhövel (1971, 102-103) discusses these two Dutch razors in his consideration of two razors from Ha A burials at Naarn, Upper Austria, and Gosberg, Kr. Forchheim, Bavaria; he dates the Bargeroosterveld knife to Ha B1. Tackenberg compares razors from Schledebrück, Kr. Wiedenbruck, Westphalia, and Mehrin, Kr. Calbe, Saxony (1971, Liste 61, 4, 13, Taf. 31, 4; 32, 6), which both have lozenge-shaped openwork handles with ring terminals. He prefers to date related north German razors to MV-MVI (*ibid.*, 127-128) and compares the Dutch razors to an example from the Catalan Urnfield cemetery at Agullana, Gerona (*ibid.*, 192-193; de Palol 1958, 152, fig. 164, lám. XVI). This razor has the same form of handle but a longitudinal slot in its blade. The associated pot belongs to late phase II or early phase III of the cemetery (*ibid.*, 212), dated to the mid sixth century by de Palol (*ibid.*, 233), but to the eighth or seventh by Schauer (1975a, Abb. 7). Tackenberg's argument is not convincing. He dates knives like that from Bargeroosterveld 1899 from MIV onwards (1971, 110-113, Liste 54, Karte 21). During LBA3 single-edged knives are commonly represented in the Netherlands by the socketed type (see p.180) and it seems unnecessary to lower the Ha B1/MIV date proposed by Butler (1960a, 107).

BRITAIN

144. Braes of Gight, Aberdeenshire.

Coles 1959-60, 41-43, 94-95, pl. II, 2. National Museum of Antiquities, Edinburgh, DQ 275-285. Fig. 55A.

Hoard. Four penannular bracelets with terminals expanded outwards. Fig. 55A, 1. Two penannular bracelets with thickened terminals backed by ribs. One tanged bifid razor. Three annular rings, originally joined by two bands of bronze. Two penannular neck-rings with ring terminals holding annular rings in the plane of the neck-ring. One penannular neck-ring, terminals as above, with eighteen loops around the outer circumference holding annular rings in the plane of the neck-ring.

Coles (1959-60, 41-43) considered that the neck-rings were derived from Sprockhoff's Ziemitz type (1956, 143-144, Abb. 38, Taf. 25). These neck-rings are more massive than the Scottish examples, with angular section and decoration; peripheral openwork, circular or triangular, in the plane of the neck-ring, holds multiple annular rings. One example has expanded terminals, the other two have a link attached by a hook and a ring. All three examples come from the Baltic islands of Rügen and Usedom; the only associated find is the eponymous neck-ring, from Usedom, found in a hoard (*ibid.*, 70). The contents of this hoard are mostly of MV date, but there is also a fragment of a mug with a cow's-head handle (Sprockhoff 1930c, Taf. 34, d; von Merhart 1952, 25, Taf. 15, 5) of Ha C/D date (Kossack 1959, 31, Taf. 47, 2; Peroni 1973, 38, fig. 7, 17), which should place the Ziemitz hoard in MVI (Coles 1959-60, 42-43).

Coles' derivation of the Scottish neck-rings from the MV/VI Ziemitz type is usually accepted and Hawkes (1971, 42-43) has suggested that the Nordic neck-rings were influential as far as the Tagus. This origin superseded Childe's opinion (1935, 163-164) that the Scottish neck-rings were derived from a group of Ha D neck-rings found mainly in the area between the upper Rhine, the Moselle and the Saar (Haffner 1976, 9; 1965, 11-18, Liste 1, Abb. 7). The Scottish neck-rings may also be compared to examples in hoards from south-eastern France. The Bronze Final IIIb hoard of ornaments from Champ-Colombe, Réallon, Hautes-Alpes, contains two neck-rings with rolled terminals and peripheral rings attached to a serpentine wire itself secured to the neck-ring by another wire wound around in a spiral (Courtois 1960, 94-95, figs. 38, 41). One of these neck-rings is plain, the other twisted, and there are nineteen similar plain or twisted neck-rings in the hoard (*ibid.*, 89-94, figs. 38, 40). The contemporary hoard from La Loubière, Bénévent-en-Champsaur, Hautes-Alpes, has similar neck-rings and a serpentine wire (*ibid.*, 81 no. 11, fig. 30). Courtois mentions a few other examples of neck-rings with pendant rings from south-eastern France (*ibid.*, 94).

None of these groups of neck-rings is exactly alike but the Nordic examples are more elaborate and substantial than the Scottish rings while the Alpine neck-rings have slender bodies like the Scottish examples.

The groups are also widely separated and, while neck-rings are common in south-eastern France and the Nordic area, neck-rings with pendant rings are scarce. Neck-rings are rare during the Late Bronze Age in Britain and Ireland appears to have produced only gold examples (Eogan 1964, 306) save for a single bronze example in the hoard from Ballykeaghra, Co. Galway (*ibid.*, 338 no. 35). The Nordic ornaments cited by Coles do not appear to be sufficiently similar to the Braes of Gight neck-rings to require Nordic origin and LBA4 date for the Scottish ornaments and the material from south-eastern France suggests that Urnfield origin and LBA3 date are possible. The only Scottish finds related to the Braes of Gight neck-rings are three fragments in the Wester Ord hoard, Ross. (Coles 1959-60, 43, 130, pl. V, 1).

The three rings joined by bronze bands are compared to Nordic finds by Coles (*ibid.*, 95; Sprockhoff 1956, Taf. 71) but such chains are also common in the west-Alpine area (Courtois 1960, figs. 33, 39, 44; Bocksberger 1964, fig. 30, 45) and reach western France (Cordier, Millotte and Riquet 1960, 111, fig. 4, 36, 41). Eogan derives Irish chains from these west-Alpine late Urnfield examples (1964, 309, fig. 16, 8).

The bracelets belong to the Covesea type; those with terminals expanded outwards may reflect Urnfield influence, while those with thickened terminals may reflect Irish influence (Coles 1959-60, 89).

145. Balmashanner, Angus.

Coles 1959-60, 43, 98-99. National Museum of Antiquities, Edinburgh. DQ 131-193. Fig. 55B.

Hoard. One fragmentary socketed axe with oval mouth. Six penannular bracelets, D-section with terminals expanded all round. Three penannular bracelets, thickened terminals. Fig. 55B, 1-2. Two penannular bracelets with tapering terminals. Fig. 55B, 3. Ten annular bronze rings. One annular iron ring. Three penannular gilded rings. Four gold lock rings (Eogan 1969, 118-119 nos. 21-24). One miscast bronze cup, convex profile. Twenty-six amber beads.

Five jet or albertite beads. Sherds of a coarse pottery vessel. Most of the bracelets reflect Irish influence (Coles 1959-60, 89). Hoard finds of lock-rings belong to LBA3 though some come from settlement sites which have produced LBA4 material (Eogan 1969, 106-107).

146. Dalduff, Kilkerran, Ayrshire.

Coles 1959-60, 30-34, 38, 105-106, fig. 4, 1; Leeds 1930, 5-7, 31 no. 2, pl. IV, figs. 2-3; Hawkes and Smith 1957, 182; Butler 1963a, 121-122, fig. 34. National Museum of Antiquities, Edinburgh. Fig. 55C.

Hoard, found in a pot. Nine socketed axes. Two cauldron staples with rings, one additional ring. (Leeds 1930, pl. IV, figs. 2-3). Two fragments of a sword with a lozenge-section blade, rounded shoulders and a short tang. Fig. 55C, 1.

Coles (1959-60, 106) compares the axes to examples in the east Midland hoards of LBA3 from Bagmoor, Lincs. (Inv. Arch. GB23, 11-13, 15-18, 14-27), and Nottingham (Inv. Arch. GB22, 9-10). The staples belong to

a cauldron of Class A 2 (Hawkes and Smith 1957, 182). The Dalduff sword is probably a Nordic tanged sword with the tang broken. The convex shoulders suggest a MIV date (Bandou 1960, 10-11, Taf. I, IB, IC1; II, IB), e.g. Neble, Søro Amt, Zealand (Broholm 1946, 31 no. 258), Vester Vandet, Thisted Amt, Jutland (*ibid.*, 46 no. 426), Øster Hassing, Aalborg Amt, Jutland (*ibid.*, 55 no. 552) and Alleslø, Odense Amt, Fyn (Broholm 1949, 30, pl. 1, 3-3a). MV swords have broader, more angular shoulders (Baudou 1960, 11; Sprockhoff 1956, 73-77). Thrane has confirmed that the Dalduff sword is an MIV type (1975, 234 n. 150), but it should be residual for the variety of socketed axes, faceted, ribbed, bag-shaped and 'English' (Coles 1959-60, 31-34, fig. 4, 1) indicate a LBA3 date for the hoard.

147. Parc-y-Meirch, St. George, Denbigh.

Sheppard 1941; Savory 1976a, 44-46, 52-53, fig. 9.

Hoard, found just outside the hillfort of Dinorben (Gardner and Savory 1964, fig. 3); the hoard is often known after Abergyle, 8 km away. The bronzes were found in a bed of broken limestone and soil which also contained human bones (Burgess 1976b, 87 no. 7) but the nature of the deposit is not exactly known. Two sets of rattle-pendants made up of three interlocking rings with cast torsion ornament. Onto each ring were attached two pendants, though one is missing from one set; these pendants are slightly oval in shape, all have a ribbed border and some have a central knob. The pendants are attached to the rings by large loops which also bear torsion ornament; these loops are set in the plane of the pendants on the two outer rings but transversely on the pendants on the central rings. Rings and loops are worn. Sheppard 1941, pl. I; Savory 1976a, fig. 9, 1. Four hollow-cast oval rings, round section filled with ? oxidised lead. The more complete examples have a double slot. Sheppard, pl. IIa, 3-6; Savory, fig. 9, 2. Three smaller rings of similar form and construction which fit inside the larger rings; they have trapezoidal loops of the same dimensions as the double slots in the larger rings. Sheppard, pls. IIa, 3-4a; VIb; Savory fig. 9, 2, 11. Twelve annular rings, some irregular, hollow-cast with a lead-like filling; worn. Sheppard, pl. III, 7-18; Savory, fig. 9, 4. Two massive oval rings with massive trapezoidal loops; another ring with the loop broken off. Sheppard, pls. III, 19; VIb; Savory, fig. 9, 12, 15. One reel-shaped object with a longitudinal slot. The loops of the massive oval rings fit into this slot to form a composite bugle-shaped object. Sheppard, pl. Va, 23; Savory, fig. 9, 15. One annular ring of copper wire with an ornamented piece attached. Sheppard, pl. III, 20. Two small annular rings. Sheppard, pl. III, 21-22. Nine buckle-shaped objects with hollow C-section loops and slotted bases which have three peaks like the slides mentioned below. Sheppard, pls. Ib, VIb; Savory, fig. 9, 3, 14. Ten slides with three peaks. Sheppard, pl. VIa; Savory, fig. 9, 7. Twenty wider slides with three peaks. Sheppard, pls. IVa; VIb; Savory, fig. 9, 6. One smaller slide with three peaks. Sheppard, pl. Va, 71. Thirteen slides with four peaks. Sheppard, pl. IVb; Savory, fig. 9, 9. Two slides with seven peaks on each side

and a slot at either end. Sheppard, pl. Va, 72-73. Four discs with conical profile bearing concentric ribs and four slots in base. Sheppard, pl. Vb, 74-77; Savory, fig. 9, 10. Five smaller discs of similar form but with a single groove round a pellet at the apex. Sheppard, pls. Vb, 78-81; Vlb; Savory, fig. 9, 8. Two buttons with concentric ribs and double loops. Sheppard, pls. Va, 82; Vlb; Savory fig. 9, 13. Eleven smaller buttons of similar form but with single loops. Sheppard, pls. Va, 83-91; Vlb; Savory, fig. 9, 5. One chain. Sheppard, pl. Vlb. Because the hoard is divided between three institutions identification of the numbers of objects in some groups may be inaccurate.

The appearance of the patina on the objects has led Savory to suggest that they may all have been produced in the same workshop (1976a, 45), but analyses by J. P. Northover suggest that the hoard contains bronzes of several different compositions, some alien to Wales. The rattle-pendants are probably of French rather than Scandinavian origin (see p. 196). The toothed slides are unusual but a similar example occurs in the Dreuil hoard (177) 27 with various other slides. The double rings and bugle-shaped objects can be matched in other British LBA3 contexts (see p. 194-5). The slotted discs are strap-crossings which first appeared in Britain during LBA2 (see p. 150); the ornament on the smaller strap-crossings is similar to that on the double-looped buttons in the Watford hoard (154). The Parc-y-Meirch buttons are related to the strap-crossings by their concentric ornament.

There is nothing in the Parc-y-Meirch hoard to suggest a date later than LBA3. Many of its types can be matched in contemporary British contexts and those which can be matched abroad find their best comparisons in France.

148. Grays Thurrock, Essex.

Butcher 1922. Colchester and Essex Museum, Colchester. 2362.11. Fig. 56.

Hoard. Thirty-three complete socketed axes and seventy-one fragments. These are predominantly south-eastern, plain or with pellet or ribbed wing ornament; there are a few examples with vertical ribs and one faceted axe. One looped winged axe. Fig. 56, 1. Two complete pegged spearheads, one with three bands of notched ornament on the socket, 2. Thirteen fragments of spearheads, some with notched or grooved ornaments on the sockets. Forty-two fragments of Carp's Tongue and Ewart Park swords. Two small bag-shaped chapes. Three fragments of double-edged socketed knives, 3-4. One fragment of a single-edged tanged knife, back convex towards the tang. 5, One double-edged knife with slight flanges on the broad tang. 6, One fragment of a double-edged tanged knife with a rivet-hole in the tang, 7. One fragment of a double-edged tanged knife with a rivet-hole in the ribbed tang, 8. Two tangs, one with a stop, the other with lugs, both probably from leather-working knives, 9-10. One complete socketed gouge and five fragments, 11. One complete socketed hammer and one fragment. One winged axe reused as a hammer. Two fragments of a straight sickle blade, 12-13. One

fragment of a curved sickle blade, 14. One annular ring. One fragment of a cauldron staple or bucket staple, 15. One fragment of a bronze mould for socketed axes. One fragment of a bracelet with a ring terminal, 16. Fragments of a flat bracelet, or similar object, with peripheral notched ribs and a rivet hole in the terminal, 17. Fragments of a bracelet with thin pointed-oval section and knob terminal defined by incised lines, 18. One fragment with irregular D-section, perhaps from a bracelet, 19. Two fragments of flat cast bronze with beaded edges, 20. One fragment of cast plate with incised lines along the border and a knob, 21. One tapering tube with grooved ornament, 22. One curved fragment of ribbed bronze with a flange and perforated by a rivet hole, 23. One fragment of a horned terminal with two rivet-holes, 24. One fragment of cast plate with grooved ornament and a broken ring, 25. One fragment of a plate with a loop on the back, 26. One fragment of a slide, 27. One fragment of an openwork box-like object, 28. One tapering terminal. 29. Four casting jets. Sixty-eight ingot fragments. One fragment of tin.

The straight-bladed sickle belongs to the Minnis Bay type (see p. 178). The bracelet with a knobbed terminal may be compared with more substantial examples in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 31, pl. 25, 298), and from the Heathery Burn Cave, Co. Durham (Inv. Arch. GB55, 5). The flat terminal with notched ribs may be compared to a piece of the same dimensions, but with plain ribs in the Ha B3 hoard from Saarlouis, Kr. Saarlouis, Saarland (Kolling 1968, 58, Taf. 50, 13). Coombs (1974a, 34, Abb. 2, 2) has suggested that the horned terminal may be a sword pommel, but I know of no similar piece.

149. Thurloe Walk, Grays Thurrock, Essex.

Doyle 1970.

Hoard. A probable total of fourteen complete socketed axes and various fragments of socketed axes. One ring of sheet bronze. One bar with the remains of a lateral loop. Various other fragments of bronze. Fragments of copper ingots.

One of the axes belongs to the south Welsh type. The looped bar may be a toggle (Raftery 1975, 84).

150. Flemming Avenue, Leigh, Essex.

Pollitt 1926. Prittlewell Priory Museum, Southend. Fig. 57A.

Hoard. Four fragments of Carp's Tongue swords. Six fragments of Ewart Park swords. Fig. 57A, 1. One fragment of a sword with openwork hilt, 2. Sixteen complete socketed axes and thirty-two fragments. Five fragments of winged axes. One fragment of a flanged axe, 3. Various fragments of spearheads. One small bag-shaped chape. Two fragments of double-edged socketed knives, 4-5. One socketed hammer. Two fragments of socketed gouges. Three hog's-back knives (Burgess 1968a, fig. 13, 10). Three fragments of convex sickle blades, 6. One knobbed butt, probably from a

sickle blade, 7. One fragment, possibly from the shoulder of a socketed sword, 8. Various fragments of Carp's Tongue plaques. Various rings. One octagonal-section fragment, perhaps from a bracelet, 9. One fragment of a bracelet with V-shaped section and expanded terminal backed by three ribs, 10. One fragment of a slender bracelet with expanded terminal, 11. One fragment of slender bracelet with tapering terminal, 12. One fragment of a bracelet. 13. One fragment of a bracelet with oval section and incised and; grooved ornament, corroded in the socket of another object, 14. Metal fragments. Casting jet.

The sickle butt probably belongs to the Minnis Bay type; the sickle blade fragment with two ribs could be from a late Urnfield sickle. The octagonal-section fragment could be from a bracelet related to the Homburg/Balingen type (see p.206-7). The bracelet with V-shaped section could be related to various Breton Carp's Tongue forms, though these do not have such angular sections (Briard 1966a, pls. 29; 31), but the angular section occurs in the contemporary hoard from Choussy, Loir-et-Cher (Breuil and Bouillerot 1912, 101, pl. II, 31). The bracelet fragment may be compared to examples from the same contexts (*ibid.*, pl. II, 35-45; Briard 1966a, pl. 26). Openwork hilts, usually separate from the tang, are known on Nordic swords of MIV and MV (Baudou 1960, 9-10; Sprockhoff 1931, Taf. 16; Jacob-Friesen 1972, 55-61), but the Leigh sword does not belong to this group and may be regarded as an experimental British type in the same way as socketed swords and swords with cast bronze pommels (see p. 185-6, 189-90). It is notable that it should be found with a probable fragment of a socketed sword. The flanged axe fragment appears closest to the French Middle Bronze Age Atlantic type (see p. 41).

151. Shoebury, Essex.

Pollitt 1932. Prittlewel Priory Museum, Southend. Fig. 57B.

Hoard. Two socketed axes, one plain, the other with ribbed wing ornament. One unlooped winged adze, Fig. 57B, 1. One plain pegged spearhead. One horned object, hollow-cast with a clay core, knobbed terminal, oval socket, 2. Two fragments of metal cake.

The adze is probably of central European late Urnfield origin (see p. 160). The horned object may be related to the terminal in the Déville hoard (173) 16.

152. Southchurch, Essex.

Laver 1898. Colchester and Essex Museum, Colchester. Fig. 57C.

Hoard, separate from LBA1 hoard (106) found at Southchurch, near Thorpe Hall, some thirty years later than the present hoard. Three fragments of Carp's Tongue swords. Four fragments of Ewart Park swords. Twenty-one complete socketed axes or fragments, including one fragment with a deep collar and triple rib, Fig. 57C, 1. One fragment of a double-edged socketed knife, 2. Five fragments of spearheads. One blade fragment of a double-edged knife. One small bag-shaped chape. One fragment of a bugle-shaped object. One

complete socketed gouge and one fragment. One flanged hilt of an object with a curved blade, 3. Two terminals of tubes, one completely open, the other with a flange, 4-5. One fragment of massive bronze, rectangular at one end, octagonal at the other, 6.

The illustrated axe fragment may belong to a north Dutch socketed axe (see p.165). Fox considered that the flanged hilt was part of a sickle (1941, 144, 158, no. 19, pl. II, 10).

154. Holywell Industrial Estate, Watford, Herts.

Watford Public Library. Fig. 58A.

Hoard. One Ewart Park sword, in four fragments; broad midrib with bevelled edges, two rivet-holes in slightly convex shoulders, single rivet-hole in grip, shallow notch in pommel, Fig. 58A, 1. One Ewart Park sword, also in four fragment, grip broken off (Burgess 1968a, fig. 13, 3). One fragment of a Carp's Tongue sword blade. One tip of a sword blade, probably from a Carp's Tongue sword. Ten pegged spearheads, three undecorated, seven with bands of grooves, lines, pointillé or zigzag on the socket; one of these has ring-and-dot ornament on the blade, Fig. 58A, 2. One large socketed axe with deep collar, single horizontal rib and three vertical ribs. Two socketed axes with deep collar and three vertical ribs. One socketed axe with collar, a single horizontal rib and two vertical ribs. Two socketed axes with collar, single horizontal rib and four vertical ribs. One socketed axe with collar, single horizontal rib and three short vertical ribs ending in pellets. One socketed axe with collar and single horizontal rib, ribbed wing and pellet ornament. Six socketed axes with collar and single horizontal rib. Three faceted socketed axes and one fragment. Four fragments of socketed axe blades. Four socketed gouges (Burgess 1968a, fig. 13, 12). One socketed chisel. Two bifid razors with key-hole notches and double-ring handles, Fig. 58A, 3-4. One lozenge-shaped mount (Burgess 1968a, fig. 13, 25). One bugle-shaped object, *Ibid.*, fig. 13, 22. One toothed plate with loops on the back (*Ibid.*, fig. 13, 26). Fragments of a mounting with perforated and incised ornament (*Ibid.*, fig. 13, 14). One semi-circular mount with a convex flange and lateral rivet-holes, Fig. 58A, 5. Two buttons with pellet in central depression, two loops, Fig. 58A, 6-7. Fragments of plano-convex ingots. Photographs in Watford library show the following additional objects: Part of a sheet bronze vessel, apparently one stage of a convex-profile vessel smaller than a cauldron. One fragment of a socketed axe with ribbed wing ornament. Two fragments of razors. Coombs (1974b, 267, fig. 2, 2) illustrated a fragment of a barbed spearhead from the Watford hoard and also (*ibid.*, fig. 1) attributes to it a tanged razor, perhaps one of the fragments known to me only from the photographs.

The notched pommel in the complete sword is a characteristic of the Thames type (Cowen 1967, pls. LXII, 9-10; LXIV, 3, 6-7), though the even convex outline of the hilt and the convex shoulders are not (*ibid.*, pl. LXII). The majority of the spearheads have decorated sockets; the ornamented blade is more unusual but it can be matched in the

Bronze Final III hoard from Questembert, Morbihan (Briard 1965, 216). The axe with short rib and pellet ornament appears to be East Anglian (cf. Norwich 1966, figs. 57, 63) but the other ribbed axes belong to a group which has not yet been defined. The barbed spearhead belongs to Type IV, confined to eastern England, north of the Thames in all cases save one (Coombs 1974b, fig. 3). The Watford hoard is notable for a large assortment of Carp's Tongue ornaments. The double-looped buttons resemble an example in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, 29, pl. 20, 248).

155. Verrall's Sandpit, Aylesford, Kent.

Herne Bay Public Library and Museum. Fig. 58B.

Hoard. One complete looped winged axe, Fig. 58B, 1. One fragment of a looped winged axe, 2. One fragment of a winged axe blade, 3. Various fragments of metal cake, including plano-convex ingots, 4. One pot of fine sandy black fabric, surface smoothed, irregular convex profile with irregular double groove below neck which is broken off, base eroded, 5.

Finds of pottery in association with Late Bronze Age hoards are often recorded but the pots rarely survive in such a complete state as the Aylesford vessel, which should be dated to LBA3 by the axes. Local comparisons must await detailed publication of Late Bronze Age pottery from sites in the lower Thames valley. The form of the Aylesford pot resembles that of certain necked urns from Urnfield cemeteries on the lower Rhine (Desittere 1968, figs. 30, 1; 34, 3; 36, 3; 100, 7; 101, 1) but these, and many similar vessels, are consistently broader than the Aylesford pot for which I can find no convincing parallel in the lower Rhine area.

156. Minnis Bay, Birchington, Kent.

Worsfold 1943. BM 1961.10.6. Figs. 59-61.

Hoard, found on an occupation site on the foreshore. The original excavation defined two phases separated by silt. The first phase comprised a roughly rectangular hollow with seventeen shallow irregular pits cut into the underlying chalk. These pits contained pottery, worked stone, animal bones, one fragment of human bone and other organic material. The second phase comprised rammed chalk and gravel with horizontal and vertical timbers and hazel wattle. The hoard was found 'about a foot below the surface of the gravel bank' (Worsfold 1943, 28) before systematic excavation took place. The site has recently been re-interpreted by T. C. Champion, who points out that coastal recession since the Bronze Age and the nature of the environmental remains suggest that the site was originally on dry land. The timber and wattle structure are later than this recession, probably no earlier than medieval. The stratigraphical position of the hoard is uncertain and it is unfortunate that there is no secure connection between the hoard and the important group of pottery from the site (Worsfold 1943, 36-39; Cunliffe 1974, 34-35; fig. A:4, 16-18; Harding 1974, 131, fig. 37).

Examination of the area in which the hoard was found revealed a jet of bronze, the tip of a knife and a pin with an oval bead above two ribs (Worsfold 1943, 33, fig. 5). One socketed sword, Fig. 59, 1. One hilt fragment of a Ewart Park sword, 2. One grip fragment of a Ewart Park sword, 3. Four blade fragments of Carp's Tongue swords, 4-7. Two points of Carp's Tongue sword blades, 8-9. Two sword blade fragment, 10-11. One small bag-shaped chape, 12. One pegged spearhead with three bands of incised ornament on the socket, 13. One spearhead socket, 14. One socketed axe with collar, three horizontal ribs and large loop, bell-shaped facets on blade, 15. One socketed axe with shallow collar and three vertical ribs, 16. One socketed axe with collar and four vertical ribs, 17. Three socketed axes with collar, single horizontal rib and three vertical ribs, Fig. 60, 18-20. One small socketed axe with three vertical ribs, 21. One socketed axe with collar and single horizontal rib, 22. One socketed axe with shallow collar and single horizontal rib, 23. One socketed axe with collar, single horizontal rib with angular ribbed wing ornament flanking central X-shaped rib, 24. One fragment of a broad socketed axe blade with three vertical ribs, 25. Two blades of faceted socketed axes. Two socketed axe blades. Three mouth fragments of socketed axes, one with collar, two with collar and single horizontal rib. Three looped winged axes, 26-28. One butt fragment of a looped winged axe, 29. One blade fragment of a winged axe, 30. Two socketed gouges, Fig. 61, 31-32. Three socketed chisels, 33-35. One socketed tool with expanded blade, 36. One socketed hammer, 37. Two sickle blades, almost straight with knobbed butt, 38-39. One fragment of a convex sickle blade, 40. Three annular rings, two solid, one hollow. One fragment of a penannular bracelet, assymmetrical oval section, decorated with groups of oblique incised lines, slightly everted terminal, 41. One fragment of a penannular bracelet with incised ornament and large everted terminal, 42. One fragment of a penannular bracelet, undecorated with large everted terminal, 43. One fragment of a penannular bracelet with transverse incised lines and slightly everted terminal, 44. One fragment of a penannular bracelet, hollow section with bands of transverse ribs and everted terminal, 45. One fragment of a penannular bracelet with transverse incised lines and plain terminal, 46. One fragment of cast twisted wire with hooked terminal, 47. One piece of cast twisted wire bent into a ring. One biconical bead, 48. One fragment of a double-edged socketed knife, 49. One fragment of a hog's-back knife, 50. One double-ring terminal with transverse rib and ribbed continuation, 51. One fragment of a cauldron staple, 52. Six roundels of sheet bronze with concentric ribbed ornament and opposed tabs, 53-58. Two fragments of a horned sheet, 59. One convex sheet with opposed tabs, 60. Four fragments of sheet bronze. One corroded point of a double-edged blade. One casting jet. One fragment of copper cake.

Socketed axe 15 is a north Dutch form. The example with X-shaped rib ornament 24 can be matched in the Plainseau hoard (178)7, variants of this motif occur on other axes from the Somme valley (Breuil 1905,

fig. 7, 85-86); the ornament and round mouth of this Minnis Bay axe mark it out as a French export. Axe 16 with shallow collar from which springs the loop, and three spaced ribs, belongs to the south Welsh type (Savory 1958a, 37 n.4) and the blade fragment 25 could also be of this type. Axes with three vertical ribs are not numerous in hoards in eastern England south of the Thames; there are other examples in the hoards from Addington, Surrey (Inv. Arch. GB54, 22, 26), Bexley Heath, Kent (Inv. Arch. GB53, 8-9), Hayne Wood, Saltwood, Kent (Osborne 1939), Dartford, Kent (Brailsford 1947, fig. 1, b-c). The widely spaced ribs on 20 recall Yorkshire axes but this is not a characteristic example. Axes with four vertical ribs are nowhere numerous: Meldreth hoard, Cambs. (Inv. Arch. GB13, 14), West Halton hoard, Lincs. (Davey 1973, fig. 35, 338), South Kyme, Lincs., hoard 2 (*ibid.*, fig. 36, 247-348) and hoard 3 (*ibid.*, fig. 36, 349). The Dartford hoard contains a small axe of the form of Minnis Bay 21 (Brailsford 1947, fig. 1, f). Burgess (1974, 210 n.300) has suggested that there are 'northern end-winged axes' in the Minnis Bay hoard. Winged axe 28 with narrow butt, high-set loop, a distinct constriction below the wings, and concave profile is certainly alien to the southern British/northern French series as the other two near-complete 26-27 may be. While such winged axes occur in the Nordic area, they are more common on the middle Rhine (see p.159), and the Minnis Bay winged axes were probably derived from this area. The straight-bladed sickles belong to the Minnis Bay type. Both of the bracelets with large everted terminals 42-43 belong to the Lyzel type of north-eastern France (see p.210). The hollow bracelet 45 belongs to the Balingen type and the massive bracelet 46 could belong to the Homburg type, both of middle Rhine origin (see p. 206-7). Three of Audouze's sub-types of French sheet bronze belt ornaments are represented in the Minnis Bay hoard. The horned fragments 59 belong to her sub-type 2, rectangular with two pairs of tabs; the small convex sheet 60 to her sub-type 3; the six roundels with concentric ribs 53-58 to her sub-type 4 (1974, 248). The roundels are too small to be base-plates from a bucket (Hawkes and Smith, 1957, 136, 139-140, fig. 3, E; Eogan 1964, 299-300, fig. 13). The cauldron staple belongs to Class B1 (Hawkes and Smith 1957, 182, 185). The double-ring terminal 51 belongs to a razor (Jockenhövel 1971, 165 n.2); its form does not appear to be matched precisely but a razor in the Vénat hoard, Charente, has a double ring, transverse ribs and ribs on the lower part of the blade (George and Chauvet 1895, pl. X, 93).

157. Stourmouth, Kent.

Bradshaw and Coombs, n.d. Royal Museum, Canterbury. Fig. 62A.

Hoard. One hilt fragment and three blade fragments of Carp's Tongue swords. Two faceted socketed axes. Two socketed axes with collar, single orizontal rib and pellet. One fragment with collar, two horizontal ribs and plastic wing ornament, Fig. 62A, 1. One fragment with collar and ribbed wing ornament demarcated above and below by a horizontal rib, 2. Seven fragments with collar and single horizontal rib. One fragment with collar, single horizontal rib and traces of vertical ribs. One fragment with collar and two horizontal ribs.

Three blade fragments of socketed axes. One tip of the blade of a double edged knife. One fragment of a hog's-back knife, 3. One fragment of a single-edged blade, 4. Two leather-working knives, 5-6. One complete socketed gouge and one fragment. Three fragments of spearhead blades. One terminal of a tubular ferrule, 7. One fragment of a penannular bracelet, solid round section with disc terminal, 8. One fragment of a sheet bracelet, convex section, two transverse ribs on terminal which has a rolled edge, 9. One fragment of twisted rod. One enigmatic fragment, oval-section shaft with triangular insets and perforated by three holes, expanded terminal with the scar of a shaft of similar form, 10. Casting jet and ingot fragments. One sherd of pottery with fingertip ornament. The sheet bracelet 9 belongs to the Wallerfangen type (see p. 208).

158. Welby, Leicestershire.

Powell 1948; Inv. Arch. GB24. Jewry Wall Museum, Leicester.
Fig. 62B.

Hoard, many objects melted down soon after discovery. One socketed axe with shallow collar, two horizontal ribs and three vertical ribs, Fig. 62B, 1. One socketed axe with collar, single, well-defined horizontal rib and three short vertical ribs, 2. One socketed axe with collar, single, ill-defined horizontal rib and three short vertical ribs, 3. One pegged spearhead. Four fragments, probably from the same Ewart Park sword, hilt broken and repaired in antiquity, 4. One fragment of a hollow toothed mount, 5. One hollow-cast annular ring with a trapezoidal loop, 6. One disc with central perforation, angular profile, beaded rim and two loops on the underside, 7. Five strap-crossings with four slots, stepped central boss and peripheral rib, 8. Two cruciform handle-attachments, more heavily corroded than other objects in the hoard, 9-10. One cup of cast bronze with several flaws, narrow omphalos base, carinated profile, convex below angular shoulder, conical and ribbed above, everted rim.

The socketed axes may be compared to examples in other hoard from the east Midlands, Nottingham (Inv. Arch. GB22, 1-4) and Newark (Inv. Arch. GB36, 6-8), Notts., and related axes are common in Lincolnshire (see p. 161). In the first publication of the Welby hoard Powell recognised that the handle-attachments belonged to bowls of central European type and illustrated such a vessel from the Unterglauheim hoard, Ldkr. Dillingen, Swabia (1948, 34-35, fig. 4), which he dated to Hallstatt I, i.e. Ha C/MVI (*ibid.*, 36-37). The chronology of the Welby horse-gear led him to place the hoard in the sixth century (*ibid.*, 38-40) and this dating presented a problem to von Merhart in his classic study of sheet-bronze vessels (1952). He divided bowls with cruciform handle attachments into four groups: B1, with convex-profile body, late Urnfield; B2a, with angular body, late Urnfield and Hallstatt; B2b, with high angular shoulder, the body constructed of more than one sheet, Hallstatt; C, convex body without the footring present on the other groups, Hallstatt (*ibid.*, 3-5, Taf. 1-6). Acceptance of Powell's Hallstatt date for the strap-crossings led von Merhart

to place the Welby attachments in Group C, although their short arms were characteristic of attachments of late Urnfield date (*ibid.*, 14). Subsequent writers have retained Powell's original comparison with the Unterglauheim vessel of group B1 (Inv. Arch. GB24; Hawkes and Smith 1957, 155; Powell 1976, 9; von Merhart 1952, Taf. 2, 8). This attribution is plausible but not certain. B1 bowls usually had 'twin' attachments and double attachments only became common on later groups and these were often decorated, with longer arms than the Welby attachments (*ibid.*, 4, Taf. 1-6) which can be matched on bowls of B1 (*ibid.*, Taf. 1, 81; 2, 8) and B2a (*ibid.*, Taf. 3, 9-10).

Further evidence is provided by Thrane's account of bowls from Scandinavia. Double attachments occur on the B1 bowl in the MIV hoard from Vester Skjerninge, Fyn (1965, 176-178, fig. 10a, 3), and on the B2a bowl from Svensmark, Møn (*ibid.*, 179-182, fig. 12); the Svensmark attachments are closer in form to those from Welby.

B1 bowls have been discussed in greater detail by Patay (1969, 181-184, 202-204); most examples have been found in the upper valley of the Tisza (*ibid.*, Abb. 14) but all those with double attachments occur further west. It should be noted that Patay does not include the Welby attachments in his list of B1 bowls. He dates the appearance of B1 bowls to Ha A2 and they were current during Ha B1 and Ha B2, but the examples with double attachments are of Ha B1/MIV date, Vester Skjerninge and Unterglauheim (*ibid.*, 204; Müller-Karpe 1959, 167, Abb. 41, 9, Taf. 169). B2a bowls appeared in Ha B2 and were current during HaB3/MV (*ibid.*, 130; Thrane 1975, 142); an example with convex profile and attachments like those from Welby was included in a Ha B2 hoard with four B1 bowls at Kunisowce, on the Dniester in eastern Galicia, the Carpatho-Ukraine, now in the south-western part of the Ukrainian SSR (Patay 1969, 203; von Merhart 1952, Taf. 2, 10-11; 3, 10).

The Welby attachment could be from a bowl of group B1 and B2a whose date should be in the earlier part of Ha B. Such bowls with double attachments were probably made outside the Tisza valley area, perhaps in northern Hungary or Slovakia (Patay 1969, 187).

The sword and the socketed axes in the Welby hoard suggest a LBA3 date. The hollow-cast ring is the inner element of a Parc-y-Meirch double ring (see p. 195). The toothed mount may be compared with the toothed slides in the Parc-y-Meirch hoard (147). The double-looped perforated disc may be related to the double-looped buttons in the Watford hoard (154). Circular strap-crossings may most economically be derived from the Wilburton industry and need be no later than LBA3 (see p. 193-4). The bronze cup is unique though cast-bronze vessels occur in other British hoards of LBA3 (see p. 193), it is probably related to ceramic furrowed bowls but the chronology of Late Bronze Age pottery does not yet appear sufficiently well established to allow its use to date the Welby hoard. Piggott (1952-53, 183) and Hawkes and Smith (1957, 155) recognised that the Welby attachments were of late Urnfield date, 'no later than the middle seventh century', Harding (1974, 149-151) repeats this seventh-century date, while Cunliffe's sixth-century date (1974, 31) has been revised to eighth-seventh-century

(1978, 35). Powell himself recognised that the Welby attachments belonged to a bowl of Urnfield date (1976, 9) and Champion (1975, 136) has applied the earliest date possible for the attachments, Ha B1, to the Welby hoard; this would place the hoard in LBA2 and require radical revision of the chronology of its sword and axes.

The Welby attachments, without the rest of the bowl, cannot be dated closely. I prefer to regard them as residual and place the hoard in LBA3, neither earlier, nor later.

159. Auchtertyre, Morayshire.

Coles 1959-60, 120-121. National Museum of Antiquities, Edinburgh, DQ 106-115. Fig. 55D.

Hoard. One looped socketed axe with oval section and double mouth moulding. One fragmentary spearhead. Four penannular bracelets, terminals everted, Fig. 55D, 1. Two penannular bracelets, thickened terminals backed by three ribs, 2. Other fragments of bracelets. Fragments of a ring of tin and lead.

160. Sculptor's Cave, Covesea, Morayshire.

National Museum of Antiquities, Edinburgh. Benton 1930-31. Fig. 55E.

Excavation of the deposits in the cave revealed stratified layers of Late Bronze Age date and some residual and unstratified Bronze Age objects. Six penannular gilded rings and two similar bronze rings. Two penannular bracelets with thickened terminals backed by ridges, Fig. 55E, 1-2. One penannular bracelet with slightly thickened terminals, 3. One smaller fragmentary bracelet with slightly everted terminals. Coarse pottery, a piece of perforated sandstone and a broken flint knife.

161. Ingoldisthorpe, Snettisham, Norfolk.

Coombs 1974a.

Objects ploughed up in a field, probably a hoard. Fragment of the hilt of an antennae-pommel sword, convex grip with two ribs remaining, Coombs 1974a, Abb. 1, 1. Fragmentary socketed axe with four grooves on the faces, 2-3. Fragment of a socketed axe with collar and single horizontal rib, 5. Fragment of a faceted socketed axe, 4. Blade fragments of four more socketed axes, 6-9. In litt., 21.10.74., Dr. Coombs adds: One additional axe fragments.

One socketed gouge. Fragment of the blade of a Carp's Tongue sword. The antennae-pommel sword cannot be attributed to any specific type within the Ha B2-B3/MV currency of these swords (see p.185). Socketed axes with grooved ornament are unusual (Savory 1975, 114).

162. Horsehope Craig, Manor, Peebles.

Piggott 1952-53; Coles 1959-60, 123-124.

Hoard. One faceted socketed axe, Piggott 1952-53, fig. 1, 1. One Yorkshire socketed axe, 2. Five objects with a concave disc on a slightly conical socketed perforated by two rivet-holes, 3. Two

objects with a concave disc bearing concentric rib ornament and a concave flange below, perforated by three rivet-holes, 4. One mounting with peripheral flanges and broad longitudinal rib, bent down at one end and perforated by several rivet-holes, 5. Fragments of two similar mountings, probably a pair, tapering at one end with a circular perforation and flanges at the other end, 6-7. Two strips with edges raised at an angle, two rivet-holes at each end, bent over, 8-9. Six annular rings of hollow-cast bronze with clay core, part of the circumference very worn, marks at three other points inside, fig. 2, 10-11. Four smaller rings with two marks, 13-14. One larger ring with no marks, 12. One annular ring of hollow-cast bronze with clay core and a broken loop, 15. Two annular rings of hollow-cast bronze with clay core, 16-17.

Faceted and Yorkshire axes are both common in southern Scotland (Burgess and Miket 1976). Piggott (1952-53, 179) compared the socketed discs with a pair of objects in grave 28, Hradenín, Bohemia (Dvůrák 1938, Abr. 38, 2-3); these objects have flat discs and were probably fittings on the rear of a wagon (*ibid.*, Obr. 37). Kossack dates this grave to Ha D1 (1970, 107 n.37). Piggott (1952-53, 178) also cited an object in the enigmatic burial in barrow 108, Aldro, Yorks.; his drawings of this burial have been reproduced by Challis and Harding (1975, 42-43, fig. 20, 1). The Aldro burial contained iron objects; its chronology is uncertain. The Horsehope socketed discs may be related to the LBA2 'hub-caps' but this is uncertain (see p. 150). The flanged discs with concentric ornament can be compared to several objects in French hoards of Bronze Final III; Amboise, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 4, 46); Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 19, 236); Saint-Georges-d'Oleron, Charente-Maritime (Roussot-Larroque 1971, 588, fig. 1, 6). There are flanged discs of different form in the Isleham hoard (127) and a flanged disc with a central perforation in the LBA3 hoard from Aylsham, Norfolk (Clough 1970-73, 166-167, fig. 3, 6). Flanged and socketed discs are otherwise rare in British LBA3 hoards though the fragment in the Grays Thurrock hoard (148) and two pieces in the Shenstone hoard, Staffs. (Coombs and Chitty 1967-68, 12-13, fig. 1, 10-11), may be noted. It may be accepted that the Horsehope strips and mountings could be wagon-fittings but comparable material is scarce; there is a similar object in the hoard from Durtal, Maine-et-Loire (Cordier and Gruet 1975, 189, fig. 38, 12), which contains material ranging in date from Middle Bronze Age palstaves to Armorican socketed axes. The rings are probably elements of horse-gear, the looped ring should be part of a two-piece bugle-shaped object.

There are no objects certainly of Hallstatt date in the Horsehope hoard and Piggott's original date of Ha C/D (1952-53, 184) may be modified to LBA3 (Hawkes and Smith 1957, 154; Coles 1959-60, 51-52).

NORTH-EASTERN FRANCE

163. Juvincourt-Damary, Aisne.

Jockenhövel and Smolla 1975.

Hoard, found near the confluence of the Miette and the Aisne by German troops during the First World War. Part of the hoard was later published with the provenance Herbrechtingen, Kr. Heidenheim, Württemberg (*Fundberichte aus Schwaben*, NF8, 1933, 35, 55, Taf. 12, 1-7); this was subsequently revised (*ibid.*, NF11, 1938-50, 56; Dehn 1972, 99). One fragment of Carp's Tongue sword. Jockenhövel and Smolla, fig. 2, 1. One fragment of sword blade, 2. One complete pegged spearhead, 5. Five fragments of spearheads, including one with decorated socket, 3-4, 6-8. Two socketed axes with collar and single horizontal rib, 9-10. One socketed axe with collar, deep horizontal rib and three vertical ribs, 11. One socketed axe with collar, single horizontal rib and five vertical grooves, fig. 3, 12. One socketed axe, no collar, loop set low, 13. One fragment of a socketed axe with collar, 14. One socketed hammer, 15. One socketed gouge, 16. One tanged leather-working knife, 17. One narrow chisel blade, 18. Two double-edged socketed knives and one socket, probably from a similar knife, 19-21. One fragment of a single-edged socketed knife, 23. One solid-hilted single-edged knife with perforated bifid terminal, 22. One head of a pin, hollow, globular, perforated, Fig. 4, 24. One penannular bracelet with incised ornament and everted terminals, 25. One penannular bracelet with transverse ribbed ornament and expanded terminals, 26. One penannular bracelet, flat section with peripheral lines of pointillé ornament and rolled terminals, 32. One penannular bracelet with lozenge section and slightly thickened terminal, 27. One fragment of a penannular bracelet, concavo-convex section with oval ring terminal, 33. One spiral band, flat section, incised line ornament, 29. Two intertwined rings of bands with incised line ornament, 30-31. One oval ring, solid circular section, 28. Three hollow annular rings, 34-36. One spiral, lozenge section, fig. 5, 37. One disc, slightly convex with central perforation, 38. Two convex pieces of sheet attached to a shaft, 39-41. Two fragments of hollow box-like objects of cast bronze with slotted ends and incised ornament, 42-43. One fragment of cast plate with ribbed ornament and staples on the back, 44. One plano-convex metal ingot, 45.

None of the socketed axes appears to belong to the Plainseau type.

The axe with three vertical ribs, 11, may be compared with British examples, e.g. in the Minnis Bay hoard (156). The axe with grooved ornament, 12, may be related to British examples and the small axe, 13, may be compared to the example in the Dartford hoard, Kent (Brailsford 1947, fig. 1, f). The other axes, 9-10, could be equally of British south-eastern or French type atlantique origin. The bracelet with everted terminals, 25, belongs to the Lyzel type (see p. 210). the example with rolled terminals can be matched in the Bonneville hoard (183). Lozenge-section bracelets, 27, usually decorated, occur in western Germany during Ha B3 (Richter 1970, 164-165). The disc,

38, belongs to the Urnfield Guevaux type (see p. 197), and Thrane considers that the two convex discs on a shaft, 39-41, are also Guevaux discs (1975, 279). The box-like objects, 42-43, and cast plate, 44, are Carp's Tongue ornaments.

The Juvincourt hoard combines local north-eastern French ornaments with Carp's Tongue and central European forms. It also contains central European single-edged knives alongside Atlantic double-edged knives.

164. Combon, Eure.

Coutil 1921, 789, 802; Kimmig 1954, 218-220, fig. 96.

Hoard, at one time in the Musée Municipal, Evreux (Burgess 1968a, 13, n.45), but it was not there in September 1975, nor was there any record of it in the manuscript catalogue of c. 1960. Three hilts, probably of Atlantic leaf-shaped swords. Fragments of at least three sword blades. Two complete pegged spearheads. Five fragments of spearheads, including one with decorated socket. Two looped winged axes. One looped palstave. One single-edged tanged knife. One tanged leather-working knife, without stop. Two fragments apparently of saws. Two tubular ferrules. One ? lozenge-section chape. One penannular bracelet with incised ornament. Two penannular bracelets with transverse ribbed ornament. Two penannular pendants. One pot, conical profile, expanded base, horizontal ribs.

This appears to be a mixed hoard; the sword hilts, palstave, chape and ferrules should all be Bronze Final II, while the bracelets (see p. 154) and pendants (see p. 214) should be Bronze Final III.

165. Illeville-sur-Montfort, Pont-Audemer, Eure.

Coutil 1921, 800, 811.

Hoard. Two fragments of Carp's Tongue swords. Five fragments of socketed axes. One disc-headed pin. Rings, tubes and various other fragments.

166. Haulchin, Nord.

Felix and Deudon 1973.

Probable hoard. One roll-headed pin. Felix and Deudon 1973, fig. 1, 1. One biconical-headed pin, 2. Two pin shafts, 3-4. One annular bracelet, D-section, chevron ornament, 5. One convex sheet-bronze disc with four peripheral rings of small bosses and an irregular cruciform motif of bosses, two irregular central perforations, 6. Three strands of wire twisted together with looped ends, 7. One rectangular sheet with three lines of small bosses and a rivet-hole at either end, a spiral attached to one rivet-hole, 8. One oval sheet with six irregular lines of small bosses and bifid terminals forming spirals, 9. One neck-ring of twisted bronze with hooked terminals, fig. 2, 10. Three sets of bronze rings, annular and penannular, plain and twisted, some re-used fragments, one has a pebble pendant and another has an H-shaped bronze pendant, 11-13.

The convex disc is probably a phalera; it belongs to von Merhart's group of Kalottenfaleren (1956, 32). These are common Lake Village finds, usually with a cast loop (*ibid.*, Abb. 1, 1-6; 2, 4), but they also occur in east-central Europe where they belong to Ha B1 and have sheet loops (*ibid.*, 44, Abb. 4, 9-11; Podborsky 1970, 143-146, Taf. 6, 10-11; 8, 11-12). The cruciform motif may be reminiscent of the four-boss motif which occurs on some Lake Village phalerae (von Merhart 1956, 88-99, Abb. 2). The double perforation in the Haulchin phalera is unusual and does not represent any characteristic form of loop attachment. Audouze (1974, 273 no. 145 bis) has identified the Haulchin disc as a belt ornament; this function is not excluded for phalerae. The Haulchin disc is probably a phalera of Lake Village origin for which a LBA3 date is possible. The neck-ring may be compared to the example in the Déville hoard (173). A LBA3 date for the Haulchin hoard is probable.

167. Arzilliers, Forest of Compiègne, Oise.

Hémery 1937; von Merhart 1952, 63, Taf. 3, 6; Blanchet, Jouve and Durvin 1976, 43, fig. 39, 1.

Hoard. One sheet-bronze bowl, known from a water-colour in the MAN. Narrow base with footring, carinated body, apparently undecorated, two pairs of cruciform attachments hold cast twisted handles. One piece of metal cake, several fragments of casting jet. The bowl belongs to von Merhart's group B2a which appeared during Ha B2 and lasted into Ha B3/MV (Müller-Karpe 1959, 130; Thrane 1975, 142). The Arzilliers bowl is unique as a complete example of a bowl with cruciform handle-attachments from western Europe though fragments occur in the hoards from Welby (158) and Adabrock (222). Thrane has marked the Arzilliers bowl as a B1 vessel on his distribution map (1975, fig. 89).

168. La Justice, Compiègne, Oise.

J.-Cl. Blanchet; Kimmig 1954, 218, fig. 95; Blanchet 1976a, 36.

Hoard. One pegged spearhead. Two looped winged axes and two fragments. Three socketed axes with collar and single horizontal rib. One socketed axe with ribbed wing ornament. Two socketed axes with four vertical ribs. Fragments of two socketed axes with collar, single horizontal rib and pellet ornament. Fragment of a socketed axe with collar, single horizontal rib and ribbed wing ornament. Sword fragments. Casting debirs.

169. Le Port Varin, Royallieu, Compiègne, Oise.

Blanchet 1976a, 36; Blanchet, Jouve and Durvin 1976, 43.

Hoard. Hilt of an antennae-pommel sword. Fourteen socketed axes. One spearhead. One bracelet. One casting jet. Blanchet (1976a, 36) includes this hoard under Bronze Final III but elsewhere (Blanchet, Jouve and Durvin 1976, 43) suggests that the axes are probably Armorican and the sword Hallstatt. Cowen is suspicious of the identification of the sword as Hallstatt (1967, 438 no. 123). A

LBA3 antennae-pommel sword would not be out of place here (see p. 185), but the precise date of this hoard is uncertain.

170. Giraumont, Oise.

J. Cl. Blanchet; Blanchet 1976a, 36.

Hoard. Two fragments of Atlantic leaf-shaped swords. Three short Atlantic leaf-shaped swords. One fragment, probably of a Mâcon sword. Fragments of two winged axes; two additional winged axes perhaps belong to this hoard. One spearhead and two fragments. One socketed gouge. One single-edged tanged knife. One tool with asymmetrical blade and ring terminal. Triple-ring handle of a razor. One looped button.

This is a mixed hoard. The Atlantic leaf-shaped swords are Bronze Final II, while the Mâcon sword (see p.186), and the razor handle (see p. 219) are Bronze Final III. One of the spearhead fragments (Blanchet and Lambot 1975, 39 no. 19 bis) probably belongs to the large type (see p.182).

171. Saint-Pierre-en-Chastre, Vieux-Moulin, Oise.

J.-Cl. Blanchet; Blanchet 1976a, 36-40; Jouve 1976.

Plateau à enceinte périphérique, first investigated by Viollet-le-Duc at the instigation of Napoleon III in 1862. More recent excavations by Jouve (1976) have revealed late La Tène and Gallo-Roman levels above Late Bronze Age occupation. The date of the defences is uncertain. A large collection of Late Bronze Age material is in the MAN. Fragments of Carp's Tongue swords. Fragments of clay moulds for sword blades. Two looped winged axes. Blanchet 1976a, fig. 36, 13. A fragment of a bronze mould for winged axes. Four double-edged tanged knives; including one with a riveted tang, one with a flanged tang and one with a ribbed tang. Ibid., fig. 36, 14; de Mortillet 1903, pl. LXXXV, 1036, 1047. Four fragments of double-edged knives. One knife made of a re-used fragment of the blade of a Carp's Tongue sword, De Mortillet 1903, pl. LXXXV, 1051. Two single-edged tanged knives with convex back and semi-circular ornament, Kimmig 1954, fig. 101, 6; Blanchet 1976a, fig. 36, 16. One single-edged tanged knife with straight back. Two pegged spearheads, Blanchet 1976a, fig. 36, 12. Various Bourget arrowheads, Ibid., fig. 36, 15. One socketed gouge, De Mortillet 1903, pl. LXXXI, 964. One tanged gouge. Four double-ended chisel-like tools, Nicolardot and Gaucher 1975, 121-122, figs. 13-14, 16. Two 'burins', Ibid., 118, fig. 6. One conical point with hammered butt. One greave. Various fragments of sheet bronze. Twelve pairs of tweezers three with suspension loops, and two fragments, De Mortillet 1903, pl. XCII, 1176. One plain penannular bracelet. One penannular bracelet with oblique incised ornament and slightly expanded terminals. One penannular bracelet, longitudinal midrib, slightly everted terminals. Five fragments of plain and twisted bracelets. Two wire ear-rings, one plain, the other twisted. Various annular rings. One spiral. One penannular pendant, Ibid., fig. 36, 8. One triangular

pendant with triangular ornament, one with cross-hatched ornament, *Ibid.*, fig. 36, 9. One concave-profile mount, De Mortillet 1903, pl. XCII, 1161. One triangular fragment of a sheet-bronze belt ornament. One fragment of a belt ornament with a tab. Various buttons and studs. *Ibid.*, pls. LXXXIX, 1114; XCII, 1160. One hundred and forty-three pins, including examples with trumpet heads, cylindrical, pyramidal, conical, biconical, spherical heads, nail-headed, roll-headed and vase-head pins; many have incised ornament on the shafts. Blanchet 1976a, fig. 36, 10-11; de Mortillet 1903, pl. XCIII, 1193, 1209. Fragments of clay moulds for pin shafts. Two small tools, Nicolardot and Gaucher 1975, 131, figs. 3-4. Many antler implements, including a cheek-piece with a central rectangular perforation and two circular perforations in the same plane, De Mortillet 1903, pl. XC, 1126. Various fish-hooks, *Ibid.*, pl. XCII, 1183. Four complete pottery vessels survive: One drinking-bottle, ovoid profile body with a teat at one end and a funnel neck with internally grooved rim, Blanchet 1976a, fig. 35, 14. One conical-necked beaker with high angular shoulders, slightly concave neck and flared rim; on the lower neck two bands of triple incised lines enclose groups of quadruple incised lines, *Ibid.*, fig. 35, 11. One sub-biconical beaker with narrow base, convex profile, broad mouth and everted rim, *Ibid.*, fig. 35, 12. One handled cup with convex-profile body, *Ibid.*, fig. 35, 13. The 1972 excavations produced sherds with hatched triangle, chevron and line ornament. Jouve 1976, figs. 5, 9, 11, 13-14; 7, 29, 32; 8. Worked flints were also found in the Bronze Final levels. *Ibid.*, figs. 6, 16-20; 7, 43.

Most of the bronze should belong to Bronze Final III; it is notable that no socketed axes were found. The bracelet with longitudinal midrib can be matched in the Amboise hoard, Indre-et-Loire (Cordier, Millotte and Riquet 1960, 116 n. 12, fig. 3, 26). The belt ornament with a tab belongs to Audouze's type 1 (1974, 248). The concave-profile mount can be matched in Lake Villages (Cross 1883, pl. XXIII, 46) and in the hoard from Villar-d'Arene, Hautes-Alpes (Audouze and Courtois 1970, pl. 30, 21), dated to Ha B1 by Schauer (1975a, 56); fifteen examples occur in the Bronze Final III hoard from Amboise, Indre-et-Loire (Cordier, Millotte and Riquet 1960, 115, fig. 4, 37-39).

The pottery drinking-bottle appears to belong to Eibner's Asparn type (1973, 158-162, Abb. 5-6), most examples of which are dated to Ha A2, though some belong to Ha B (*ibid.*, 161). This is a central European type, the examples nearest to Saint-Pierre-en-Chastre are on the middle Rhine (*ibid.*, Abb. 7). The conical-necked beaker belongs to a form which can be matched locally at Vieil-Arcy and Maizy-sur-Aisne, Aisne (Blanchet 1976a, 38, fig. 35, 17, 20, 22), Bronze Final III. The handled cup is a widespread Urnfield type which occurs at the end of Bronze Final III at Nanteuil-sur-Aisne, Ardennes (*ibid.*, 38, fig. 35, 9).

172. Lyzel, Saint-Omer, Pas-de-Calais.

Mohen 1972, 456-458, fig. 8; Gaucher and Mohen 1974, 118, Saint-Omer 1, ill. 38-39.

Hoard. One socketed axe with collar, two horizontal ribs and grooved wing ornament. Mohen 1972, fig. 8, 22. One single-edged knife with slightly concave back and broad tang, 28. One pair of tweezers, 25. One double ring joined by three cast twisted strands, 24. One penannular bracelet with flattened terminals, 21. Four penannular bracelets with bands of incised ornament and large everted terminals, 10-13. Two undecorated penannular bracelets with large everted terminals, 14-15. One penannular bracelet with concavo-convex section and everted terminals, 20. One annular shale bracelet, 16. Two penannular rings with incised twisted ornament, one appears to have the remains of a hooked terminal, 18-19. Nine pendants, more than half a circle with horizontal tube, central boss, peripheral rib and incised ornament, 1-9. Two plain tubular beads and two ribbed tubular beads, 17. Four large and sixteen small bi-conical beads, 26-27. Two boars' tusks.

The double rib and wing ornament of the axe can be matched in the Plainseau hoard (178); Fig. 66, 11, with a round mouth, but the Lyzel axe does not have the round mouth of the Plainseau type. The knife is not a characteristic form, though Tackenberg notes similar examples from north-western Germany (1971, 113, Taf. 28, 1) and there is another similar knife from the ditch of barrow 70 in the De Roosen cemetery, Neerpelt, Belgian Limburg (Roosens and Beex 1961, 18, afb. 7, 1); the finds from this cemetery are predominantly of Ha C/D date (van Impe, Beex and Roosens 1973, 23). Mohen rightly points out that the affinities of the Lyzel hoard with Belgium are especially strong (1972, 458); it is especially characteristic of north-eastern France and Belgium and contains no objects certainly of Carp's Tongue origin.

173. Déville-lès-Rouen, Seine-Maritime.

Coutil 1921, 804, pls. II bis, III bis; Verron 1971, 63-69. Musée Départemental des Antiquités de la Seine-Maritime, Rouen. Fig. 63A.

Hoard. One hilt of a solid-hilted sword, oval pommel demarcated by rib, three triple ribs on grip, narrow shoulders, oval-section blade with quadruple ribs. Fig. 63A, 1. Four fragments of Carp's Tongue sword blades and a point, probably from the blade of a Carp's Tongue sword. One two-piece bronze mould for socketed axes with collar, single horizontal rib and ribbed wing ornament (Verron 1971, fig. 40). One socketed axe with collar and single horizontal rib. One socketed axe with collar and vertical ribs. One socketed axe with collar, single horizontal rib and ribbed wing ornament demarcated by horizontal rib. One fragmentary socketed axe with collar, two horizontal ribs and double ribbed wing ornament with two pellets, demarcated by a horizontal rib. One indented socketed axe, unlooped, Fig. 63A, 2. Other fragments of socketed axes. One looped winged axe. One complete pegged spearhead and four fragments, Fig. 63A, 3. One small bag-shaped chape with concentric circle ornament (Verron 1971, fig. 50). One terminal, oval ribbed socket, knobbed end, Fig. 63A, 4. One double-edged tanged knife with single rivet-hole in the tang (Verron 1971, fig. 51). Four socketed gouges. Fig. 63A, 5. Three sickle blades with double ribs and single rivet-hole in the tang (Verron 1971,

fig. 53). One curved bar with a loop in the plane of the bar. Fig. 63A, 6. One slotted tube, 7. One tubular bead with transverse line ornament, 8. One anvil (Verron 1971, fig. 54). One twisted neck-ring with hooked terminals, bronze beads fitted onto the neck-ring (*Ibid.*, fig. 58). One penannular bracelet, broad convex section with peripheral ribs and incised ornament (*Ibid.*, fig. 59). One penannular bracelet, massive section with bands of transverse ribs and grooves (*Ibid.*, fig. 60). One penannular bracelet, massive section with bands of transverse ribs, Fig. 63A, 9. One fragment of a penannular bracelet, hollow section with transverse ribs and expanded terminal, 10. One fragment of a penannular bracelet, massive section with transverse incised ornament and thickened terminal, 11. One bracelet, bent out of shape, massive section, remains of transverse ribbed ornament, 12. Coutil (1921 pl. II bis, upper left) illustrates a complete penannular bracelet with alternate broad and narrow ribs and expanded terminals. One fragment of a flat ring or bracelet, 13. One fragment of twisted wire, 14. Seventeen solid annular rings, one with a spiral of wire attached. Four hollow rings (Verron 1971, fig. 61). One strip, possibly from a pair of tweezers, Fig. 63A, 15. Verron 1971, fig. 57. One cruciform fragment with a central perforation (Verron 1971, fig. 63). Three convex buttons, two looped, one tanged. (*Ibid.*, fig. 56). One ring with a hollow slotted rectangular attachment (*Ibid.*, fig. 65). One hollow-cast horn-shaped terminal, Fig. 63A, 16. One loop-attachment of a phalera, loop with central boss cast onto sheet, 17. Two fragments of sheet bronze, convex profile, flange, roiled rim, probably from a phalera, 18. One sphere of sheet bronze, in two parts, with double lines of small bosses (Verron 1971, fig. 64). One fragment of a bronze mould for a decorated plaque bearing a star with a circle (*Ibid.*, fig. 41). One fragment consisting of two sheets with linear textured surfaces, held together by two rivets, Fig. 63A, 19. One fragment of a cauldron staple, 20. One disc with central perforation. Various fragments of sheet bronze. Five fragments of waste bronze, three casting jets (Verron 1971, fig. 43).

The sword hilt belongs to a Möriegen sword (Gaucher and Mohen 1972, 423) of Müller-Karpe's Variant I, cf. the example from Mühlheim, Kr. Offenbach, Hesse (Müller-Karpe 1961, 73, 120, Taf. 63, 1), though it is not an entirely characteristic example. The mould appears to be for socketed axes of the Plainseau type. The oval ribbed terminal is probably a chape; similar pieces are known from Lake Villages (Gross 1883, pls. XXV, 5, 10-11; XXXVI, 17) and in the hoards from Briod, Jura (Millotte 1963, 276, pl. XXXVI, 17), and Saarlouis, Kr. Saarlouis, Saarland (Kolling 1968, Taf. 49, 1). The sickles appear to belong to the late Urnfield type (see p. 177). The looped bar may be a bar-toggle; the slotted tube and the rings are probably also elements of horse-gear. There is a larger slotted tube, with ribbed flanges around the slots, from the Seine at Paris (Ash 1927, 2050); these pieces should be related to bugle-shaped objects. The broad convex bracelet is related to the Wallerfangen type (see p. 207-8), and to the decorated C-section type (see p. 208). Two complete bracelets with bands of ribs belong to the

Balingen type (see p. 206-7), one complete bracelet and the hollow fragment with transverse ribs evenly spaced belong to the Homburg type (see p. 206). The cruciform fragment is part of a wheel-shaped object which can be matched in a Bronze Final III context in the hoard from Longueville, Calvados (Coutil 1922, fig. 1, 20). The two fragments of phalerae could be from the same object, a Lake Village phalera (von Merhart 1956, Abb. 5, 5-5a, 7-7a, 9-9a, 10-10a). Sheet bronze spheres with bossed ornament form part of the subject of an old study (de Saint-Venant 1908). They are series A (*ibid.*, 279-281) and other examples are from Mörigen, Bern, and Buoux, Vaucluse. This is probably another Lake Village type. The staple probably belongs to a cauldron of class A because it has three ribs (Leeds 1930, 5). The perforated disc probably belongs to the Guevaux type (see p. 197). The plaque mould is presumably for some sort of Carp's Tongue ornament.

174. Graville-Sainte-Honorine, Seine-Maritime.

Dubus 1912, 14-24, pls. IV-VI.

Hoard. Various fragments of Carp's Tongue swords. Dubus 1912, pl. IV, 2-4. One re-used fragment of a Carp's Tongue sword, pl. VI, 60. Two hilts, probably from Ewart Park swords, pl. IV, 12-13. Various blade fragments, probably from Ewart Park swords, pl. IV, 1, 5-7. At least one of these fragments has peripheral ridges, Verron 1976a, fig. 4, 16. Two small bag-shaped chapes, Dubus 1912, pl. IV, 8-9. One fragment of a double-edged socketed knife, pl. IV, 10. Three blade fragments probably from double-edged knives, pl. IV, 11. One complete pegged spearhead, pl. IV, 18. Sixteen fragments of spearheads, pl. IV, 14-17, 19-28. Three fragments, probably from socketed gouges, pl. IV, 29-31. Five broad flat fragments, pl. IV, 32-35. One socket with transverse ribs, teeth projecting from one end and remains of four rivet-holes at the other, pl. IV, 36. Four fragments of square-section shaft, two with rolled terminals, pl. IV, 37-39. Fragment, said to be from a bronze vessel c. 9.0 cm in diameter with everted rim, pl. IV, 40. Two fragments, presumably of sheet bronze, said to be from phalerae, pl. IV, 41. Fragment of sheet bronze, pl. IV, 42. One phalera with rolled rim and concentric ribs, external disc apparently cast onto internal loop and joined by a shaft, pl. IV, 43. One hollow object, pl. IV, 44. One concave-profile slide, pl. IV, 45. One broken socketed axe with collar, single horizontal rib and two vertical ribs on one face only, pl. V, 1. One socketed axe with collar, single horizontal rib, M-shaped ornament with a pellet at the base of each leg, pl. V, 2. One socketed axe with collar, single or double horizontal rib and ribbed wing ornament, pl. V, 3. One fragmentary socketed axe with collar, single horizontal rib, pl. V, 4. One socketed axe with collar, single horizontal rib and pellet, pl. V, 5. Two fragmentary socketed axes with collar and single horizontal rib, pl. V, 6-7. One fragmentary socketed axe with angular collar, pl. V, 8. One fragmentary socketed axe with collar, single horizontal rib and ribbed wing ornament which continues on the sides of the axe, pl. V, 9. One fragmentary socketed axe with collar and single horizontal

rib, pl. V, 10. One fragment of a socketed axe with collar, single horizontal rib and ribbed wing ornament, pl. V, 11. One fragment of a socketed axe with collar, single horizontal rib, ribbed wing and pellet ornament, pl. V, 20. One fragment of a socketed axe with collar, two horizontal ribs, ribbed wing and pellet ornament, pl. V, 21. One small socketed axe with collar and single horizontal rib, pl. V, 22. One fragmentary socketed axe with oval mouth, deep collar and three vertical ribs, pl. V, 23. One fragment of a socketed axe with collar, single horizontal rib, ribbed wing and pellet ornament, pl. V, 28. One fragment of a socketed axe with collar, single horizontal rib and multiple vertical lines, pl. V, 33. One fragmentary faceted axe, pl. V, 43. One fragment with deep collar, probably from a faceted axe, pl. V, 14. Various fragments of socketed axes, pl. V, 12-13, 15-19, 14-27, 29-32, 36-42. One valve of a bronze mould for socketed axes with collar and single horizontal rib, pl. VI, 54-55. One winged axe and two blade fragments, pl. V, 34-35, 44. Two bugle-shaped objects, pl. V, 48-49. Two loops of phaelae, pls. V, 50; VI, 49. Five fragments of sheet bronze, probably from phalerae, pl. V, 51, 52, 55, 57-59, 62, 63. One fragment of a penannular bracelet with ring terminal, pl. V, 54. One fragment of a hollow annular ring perforated by two rivet-holes, pl. V, 64. Two fragments of penannular bracelets with disc terminals, pl. VI, 1, 3. One fragment of a penannular bracelet with thickened terminal, pl. VI, 2. One fragment of a penannular bracelet with transverse ribs on terminal, pl. VI, 5. One fragment of a penannular bracelet, solid section, transverse ribs, everted terminal, pl. VI, 6. One fragment of a penannular bracelet, solid section, transverse incised ornament, everted terminal, pl. VI, 7. One fragment of a penannular bracelet, hollow-section, large everted terminal backed by rib, pl. VI, 12. One fragment of a penannular bracelet, C-section, large everted terminal backed by ribs, pl. VI, 13. One penannular bracelet, solid section, transverse incised ornament, plain terminals, pl. VI, 14. One fragment of a penannular bracelet, hollow section with transverse incised ornament and everted terminal, pl. VI, 15. One fragment of a penannular bracelet, hollow section with transverse ribbed ornament and everted terminal, pl. VI, 15. One penannular bracelet, hollow section, everted terminals, pl. VI, 16. One fragment of a penannular bracelet with hollow section, incised ornament and everted terminal, pl. VI, 22. One penannular bracelet with rolled terminals and two fragments; one of these pieces is decorated, pl. VI, 33-35; Verron 1976a, fig. 4, 14. One fragment of a twisted bracelet, Dubus 1912, pl. VI, 21. Various fragments of bracelets, pl. VI, 4, 8-11, 17-20, 23, 31-32. Seven solid annular rings, pl. VI, 24-30, 36, 38-40. One hollow annular ring, pl. VI, 37. One pendant, more than half a circle with tubular socket and central boss, pl. VI, 41. Three discs with central looped boss and peripheral rib, pl. VI, 43-44, 46. One disc with central boss and notched rim, pl. VI, 42. One disc with central perforation, pl. VI, 45. One solid annular ring, grooved, pl. VI, 47. One ring, looped and grooved, pl. VI, 48. One bronze bead, pl. VI, 50. One fragment of a razor with multiple ring handle, pl. VI,

51. Two fragments of tanged razors, pl. VI, 52-53. One small anvil, pl. V, 47. Two casting jets, pl. V, 45-46. Four ingot fragments, pl. V, 66.

Socketed axes 4, 8, 20 and 21 are said to have round mouths while 1-2, 5-7, 9-10 and 22 are said to have quadrangular moulds (Dubus 1912, 19-20). The concave profile of 3 suggests that it belongs to the Plainseau type, while the straighter sides of 1, 2 and 5 resemble the south-eastern type (see p. 161), the profiles of 4 and 8 also suggest the Plainseau type. Axes of type atlantique seem to outnumber those of Plainseau type in the Gravelle hoard. There are three faceted axes, 14, 23, and 43. The axe with multiple vertical lines, 33, is unusual; the ornament may be related to that on certain north Dutch axes (see p. 164), but the Gravelle axe appears to lack their complex mouth-mouldings. The plain, flat-topped collar of 31 could belong to a south Welsh axe. The blade fragment with peripheral ridges could belong to a sword of Thames or Hallstatt type (see p. 242). The fragment said to be from a bronze vessel cannot be identified as cast or sheet bronze; cast-bronze vessels occur in a few hoards of LBA3 (see p. 193), but the Gravelle fragment does not appear to belong to any characteristic type of sheet-bronze vessel. If it is of sheet bronze, it might be a fragment of a Wallerfangen bracelet (see p. 207). The two fragmentary phalerae loops belong to the Lake Village type and the more complete example seems to be of the same form (von Merhart 1956, Abb. A, 3; Rychner 1974-75, fig. 10); the ornament on this example resembles that on some late Urnfield phalerae (von Merhart 1956, Abb. 7). There are similar examples in the hoards from Wallerfangen, Kr. Saarlouis, Saarland (Kolling 1968, Taf. 45, 2; Inv. Arch. F42(D), 3-4), Vénat, Charente (George and Chauvet 1895, pl. XVI) and Basse-Yutz, Moselle (Millotte 1965a, 57-58, pl. XI, 1-2; Inv. Arch. F32, 1-2). The bracelet with two ridges on the terminal, 5, appears to belong to a type common in Breton hoards of Bronze Final III (Briard 1965, 225; 1966a, pls. 26, 29, 31). The two bracelets with transverse ribs and everted terminals, 6 and 15, may be compared to middle Rhine examples of Ha B3 date (Richter 1970, 161 nos. 983-984). The bracelets with transverse incised ornament, 7, 14, 15, should be related to the Balingen type (see p. 206-7) or to contemporary bracelets with incised ornament (Richter 1970, 163 nos. 1007-1010). The bracelet with large everted terminal and enclosed hollow section, 12, should belong to the Belgian type (see p. 210-1). The discs with central bosses, 42-44, 46, can be compared to examples in the Prairie de Mauves hoard, Nantes, Loire-Atlantique (Briard 1966a, pl. 20, 250), and in the Saint-Roch hoard (179). The perforated disc, 45, belongs to the Guevaux type (see p. 197).

175. Pantin, Seine-Saint-Denis.

BM WG214-217. Fig. 63B.

Hoard. One penannular bracelet, solid section with transverse ribs and slightly everted terminals. Fig. 63B, 1. One similar bracelet. One penannular bracelet with solid section, alternate zones of transverse ribs and lines of pointillé and ring ornament, slightly everted terminals, 2. One penannular bracelet, solid section, transverse ribs and plain terminals.

All the bracelets belong to the Homburg type (see p. 206), but the ring ornament on the third bracelet is unusual; concentric circles and punched dots occur on the decorated gold bracelet in the find from Walderslade, Kent (Longworth 1966-67).

176. Amiens area, Somme.

Gaucher and Mohen 1974, 108, Amiens environs 10-16.

Hoard. One fragment of a Ewart Park sword. Breuil 1900, fig. 5, 46. One valve of a bronze mould for socketed axes with ribbed wing ornament. Breuil 1902, fig. 1, 3. ? Bronze core for a socketed axe mould. *Ibid.*, fig. 1, 5, attributed to the Marlers hoard (180). Two pegged spearheads. Breuil 1903, fig. 2, 5, 8. Two pins with globular heads. Breuil 1907, fig. 1, 12-13.

177. Dreuil-lès-Amiens, Somme.

Goucher and Mohen 1974, 113, Dreuil-lès-Amiens. Ash 1927, 2268-2313; BM WG181-182. Figs. 64, 65A.

Hoard. Three fragments of Carp's Tongue swords. One fragment of a sword hilt, possibly from a LBA2 Atlantic flange-hilted sword. Fig. 64, 1. One socketed axe with collar and single horizontal rib, 2. One similar axe, 3. One socketed axe with collar, single horizontal rib, plastic wing and pellet ornament, 4. One socketed axe with collar, single horizontal rib and ribbed wing ornament demarcated by a horizontal rib, 5. One faceted axe, 6. One socketed axe with collar, two horizontal ribs, ribbed wing and pellet ornament, 7. One socketed axe with collar, two horizontal ribs and ribbed wing ornament demarcated by a rib, 8. One distorted socketed axe. One blade fragment of a socketed axe. Two fragments of double-edged socketed knives, 9-10. One fragment of a solid-hilted single-edged knife, 11. One fragment of a double-edged tanged knife with ribbed tang (Breuil 1901, fig. 2, 12). One fragment of a double-edged tanged knife with a rivet-hole in the tang (*Ibid.*, fig. 2, 13). One tang of a leather-working knife (Breuil 1902, fig. 2, 9). One socketed gouge (*Ibid.*, fig. 2, 16). Various fragments of spearheads. One pendant, more than half a circle with ribbed tube, convex section and peripheral ribs, Fig. 64, 12. One penannular bracelet with ridged section, bands of incised lines and ring terminal, 13. One fragment of an undecorated penannular bracelet with ring terminal, 14. One fragment of a penannular bracelet, slender pointed-oval section with ring terminal at right angles, 15. One fragment of a penannular bracelet of sheet bronze, convex section with rolled edges, transverse rib and rolled terminal, 16. One fragment of a penannular bracelet with disc terminal, 17. One penannular bracelet with transverse spaced ribs and everted terminals, 18. One fragment of a penannular bracelet with continuous transverse ribs and everted terminal, 19. One fragment of a penannular bracelet with incised ornament and large everted terminal, 20. One fragment of a penannular bracelet with hollow section, incised ornament and large everted terminal, 21. One fragment of a penannular bracelet, C-section with peripheral ribs, large

everted terminal backed by double rib, 22. One penannular bracelet with ribbed terminals (Breuil 1907, fig. 4, 11). Two penannular bracelets, hollow section with ribbed terminals (*Ibid.*, fig. 8, 35). One fragment of a penannular bracelet, hollow-section, ribbed ornament and everted terminal (*Ibid.*, fig. 8, 33). One fragment of a recurved wire bracelet with notched ornament (*Ibid.*, fig. 3, 7). One penannular bracelet, rectangular section with tapering terminals. One fragment of flat section bar with rolled terminal (*Ibid.*, fig. 3 4). One fragment of a twisted neck-ring with rolled terminal (*Ibid.*, fig. 3, 5). One fragment of hollow-section bracelet. One fragment of twisted wire. One fragment of a toothed plaque. Fig. 65A, 23. One fragment of a toothed plaque with a loop, 24. One curved attachment with transverse ribs and two loops, 25. One ribbed slide, 26. One ribbed slide with five peaks, 27. One concave-profile slide, 28. One rectangular slide, 29. One fragment of horned sheet, 30. Two plaque fragments (Breuil 1907, fig. 11, 9, 13). Two ridged tubes with single transverse perforation (*Ibid.*, fig. 11, 1). Two shield-shaped plates with tang; one rolled (*Ibid.*, fig. 11, 7; Taylor 1968, pl. XVII, J). Twelve annular rings, solid or hollow, one with a looped staple attached (Breuil 1907, fig. 9, 10). One cast disc with a central perforation, Fig. 65A, 31. One fragment of a hog's-back knife. 32. One double-ring terminal, 33. One fragmentary double ring (Breuil 1901, fig. 3, 29). Two flat annular rings. One tubular bead. One spiral bead. One large biconical bead. One small convex bead. One bead of spiral sheet. One fragment of a cast globular head of a pin with incised and bossed ornament, Fig. 65A, 34. One terminal with two rivet-holes (Breuil 1907, fig. 10, 8). Miscellaneous fragments, casting jets and waste.

The round mouths and concave profiles of axes, 2, 3, 5 and 7 indicate that they belong to the Plainseau type; axe 4 has a squarer mouth but its plastic wing ornament can be matched in the Plainseau hoard (178) 6, 10, and it probably belongs to the Plainseau type. Axe 8 can best be matched for ornament and the trapezoidal form of its blade in the Eprave hoard (193) centre left. The ten-sided section of the faceted axe 6 appears to be unusual. The terminal of the sheet-bronze bracelet 16 is from a Wallerfangen bracelet (see p. 207-8), and the complete bracelet with spaced ribs 18 belongs to the Homburg type (see p. 206). The two hollow bracelets with ribbed terminals may also be of middle Rhine origin, cf. an example in the Ha B3 hoard from Ockstadt, Kr. Friedberg, Hesse (Richter 1970, 166 no. 1040). The bracelet with incised ornament and large everted terminals 20 belongs to the Lyzel type (see p. 210). The plain rolled terminal may be part of a late Urnfield neck-ring of a form known in Switzerland (Bocksberger 1964, fig. 29, 1-6, 21-26, 34-35) and in south-eastern France (Courtois 1960, 79-81, 89-94, figs. 31-32, 38, 40). The ribbed slide can be matched on a site at Saint-Denis-d'Oleron, Charente-Maritime (Joussaume, Mohen and Tardy 1969, 468, fig. 8, 3), and the peaked slide is identical in construction to examples in the Parc-y-Meirch hoard (147) though none in the Welsh hoard has five peaks. The horned sheet is a belt ornament of Audouze's type 1 (1974, 248). The shield-shaped plaques are probably ear-rings; Taylor

(1968, 259-260) has suggested that they may be of Early Bronze Age date, related to the terminals of copper or gold neck-rings and to gold basket ear-rings. Mariën (1968-70) has shown that these gold ear-rings were probably produced during the Late Bronze Age but the Dreuil pieces are not characteristic LBA3 ornaments. The cast disc with a central perforation belongs to the Guevaux type (see p.197). The double-ring terminal should belong to a razor (see p. 219). The pin head is a Ha B3 Lake Village type (Kubach 1977, 505 n. 23).

178. Le Plainseau, Amiens, Somme.

Gaucher and Mohen 1974, 107, Amiens 24, ill. 41, 42, 54. Musée de Picardie, Amiens. Figs. 65B, 66, 67A.

Hoard. Seven fragments of Carp's Tongue swords (Breuil 1900, fig. 5, 52-58). Three hilt fragments of Ewart Park swords. Fig. 65B, 1-3. Seventeen other fragments of swords. One fragmentary socketed axe with collar, single horizontal rib and three vertical ribs, 4. One south Welsh axe, 5. One socketed axe with collar, long plastic wing ornament with pellet, round section, 6. One socketed axe with collar, single horizontal rib and X-shaped rib flanked by deep ribbed wing ornament, 7. One fragment of a similar axe (Breuil 1905, fig. 7, 86). One socketed axe with collar, two horizontal ribs, ribbed wing and pellet ornament demarcated by a rib, Fig. 65B, 8. One socketed axe with collar, two horizontal ribs and ribbed wing ornament, Fig. 66, 17. Two similar axes. One socketed axe with collar, two horizontal ribs and ribbed wing ornament, the bases of the wings joined by double horizontal ribs on the sides of the axe, Fig. 66, 9. One socketed axe with collar, two horizontal ribs, plastic wing and pellet ornament, 10. One similar axe. Two socketed axes with collar, two horizontal ribs, ribbed wing and pellet ornament. Two socketed axes with collar, single horizontal rib and ribbed wing ornament. One socketed axe with collar, two horizontal ribs and grooved wing ornament, 11. One socketed axe with collar, single horizontal rib and pellet, 12. One similar axe. One socketed axe with collar, single horizontal rib and ring-and-pellet ornament, 13. Two small socketed axes with collar and two horizontal ribs. One small socketed axe with collar and single horizontal rib. One socketed axe with collar and two horizontal ribs with worn wing ornament, probably plastic. Two socketed axes with collar and two horizontal ribs with indistinct ornament. One socketed axe with collar, single horizontal rib and panel of five vertical ribs separated by grooves, 14. One socketed axe with collar, single horizontal rib, ribbed wing ornament with two pellets (Breuil 1905, fig. 7, 82). One socketed axe with collar and single horizontal rib, worn and distorted, Fig. 66, 15. Seven socketed axes with collar and single horizontal rib. Three fragments of socketed axes with collar, single horizontal rib and pellet. One fragment of a socketed axe with collar, two horizontal ribs and ribbed wing ornament. Two fragments of socketed axes with collar, two horizontal ribs and plastic wing ornament. One fragment of a socketed axe with collar and single horizontal rib. One fragment of a socketed axe with collar, single horizontal rib and single short vertical rib

(Breuil 1900, fig. 6, 64). Various other fragments of socketed axes. Six looped winged axes (*Ibid.*, fig. 5, 54, 56); Fig. 66, 17. One pegged spearhead with a band of incised lines and semicircles on the socket, Fig. 66, 18. One pegged spearhead with three bands of incised lines on the socket, Fig. 66, 19. One spearhead with elaborate incised ornament on the socket (Breuil 1903, fig. 4, 26). One spearhead with bands of ornament on the socket (*Ibid.*, fig. 4, 29). Seven plain pegged spearheads (*Ibid.*, figs. 2, 4; 3, 13-14, 16-19). Four fragments of spearheads with decorated sockets (*Ibid.*, fig. 4, 23, 27, 31, 32). One fragment of a spearhead blade (*Ibid.*, fig. 5, 33). Various other spearheads. One socketed hammer, Fig. 66, 20. One anvil (Nicolardot and Gaucher 1975, 21, fig. 3). Two socketed gouges (Breuil 1902, fig. 2, 15, 17). One ring-socketed sickle (Gaucher and Mohen 1974, ill. 54). Two tanged sickles (Breuil 1901, fig. 4, 35-36). One perforated Carp's Tongue knife (*Ibid.*, fig. 3, 30). One fragment of a double-edged socketed knife, Fig. 66, 21. One fragment of a double-edged tanged knife, 22. One single-edged socketed knife, 23. One fragment of a double-edged tanged knife (Breuil 1901, fig. 2, 11). One knobbed terminal, Fig. 67B, 24. One bugle-shaped object (Breuil 1907, fig. 12, 1). One spiral (*Ibid.*, fig. 2, 2). Eight perforated ribbed spheres (Gaucher and Mohen 1974, ill. 41-42). One convex bead (Breuil 1907, fig. 9, 13). One fragment of a penannular bracelet, hollow oval section, large everted terminal backed by a rib, Fig. 67A, 25. One similar fragment, 26. One penannular bracelet, hollow section, spaced transverse ribs and slightly everted terminals, 27. One penannular bracelet, solid quadrangular section with alternating groups of transverse incised lines and ribs, slightly everted terminals, 28. Two penannular bracelets, hollow-cast on clay core, oval section with plain terminals, 29-30. Two penannular bracelets, convex section with upturned edges, transverse ribs on terminals (Breuil 1907, fig. 3, 1-2). One unfinished penannular bracelet with expanded terminals (*Ibid.*, fig. 4, 8). One penannular bracelet with broad section, incised ornament and everted terminals (*Ibid.*, fig. 6, 19). One concave-profile ring (*Ibid.*, fig. 9, 7). One annular ring (*Ibid.*, fig. 9, 14). One conical looped button (*Ibid.*, fig. 10, 1). One fragment of sheet bronze (Breuil 1902, fig. 2, 7).

The axe with long plastic wing ornament 6 is similar to the form produced by the mould in Antwerp Museum (see p. 164). Most of the other socketed axes have the characteristics of the Plainseau type, concave-profile body, round mouth and, in many cases, double horizontal rib below the collar. The panel of vertical ribs on 14 can be matched on several axes in the Hoogstraten hoard (185). There is an axe with three vertical ribs in the Juvincourt hoard (163) 11 but the example at Plainseau, 4, is not a characteristic local form. The Plainseau hoard shows the dominance of ribbed wing ornament, fourteen examples, over plastic wing ornament, six examples. The tanged sickles belong to the late Urnfield form. The knobbed terminal is probably from a flesh-hook; it can be matched in the Lulworth hoard, Dorset (Drew 1935, fig. 1; Jockenhövel 1974a, 330 no. 12, Abb. 1, 12). The two bracelets with

convex section, upturned edges and ribbed terminals appear to be narrow versions of the Wallerfangen type. The two fragments with large everted terminals and hollow oval sections belong to the Belgian type (see p. 211). The complete bracelet with alternate groups of ribbed and incised ornament belongs to the Balingen type (see p. 206-7).

179. Saint-Roch, Amiens, Somme.

Gaucher and Mohen 1974, 107, Amiens 26. MAN 32612-3. I could find no objects from this hoard in the Musée de Picardie, Amiens. Fig. 67B. Hoard. Three fragments of Carp's Tongue sword blades. Breuil 1900, fig. 5, 61-62. One socketed axe with collar and single horizontal rib, cf. Breuil 1905, fig. 6, 60-62. One socketed axe with collar, single horizontal rib and pellet, Ibid., fig. 6, 68. One socketed axe with collar, single horizontal rib, ring and pellet, Ibid., fig. 6, 70. One socketed axe with collar, single horizontal rib and ribbed wing ornament, Ibid., fig. 7, 75. One socketed axe with collar, single horizontal rib, opposed V-rib and pellet flanked by ribbed wing ornament may belong to this hoard, Ibid., fig. 7, 85. One short socketed axe with collar, single horizontal rib and three short vertical ribs, Ibid., fig. 7, 87. Two socketed axes with collar and single horizontal rib, hexagonal section, facets outlined by ribs, Ibid., fig. 7, 92. One unfinished faceted axe, Ibid., fig. 7, 93. Various other socketed axes. Gaucher and Mohen 1974, ill. 40. One plain pegged spearhead, Breuil 1903, fig. 2, 7. One pegged spearhead with a ribbed socket may belong to this hoard, Ibid., fig. 4, 30. Two socketed gouges, Breuil 1902, fig. 2, 13-14. One spiral, Breuil 1907, fig. 2, 1. One spiral bead, Ibid., fig. 3, 6. One fragment, possibly the terminal of a bracelet, Ibid., fig. 4, 13. One expanded terminal of a bracelet (Fig. 67B, 1). One large everted terminal of a bracelet (2). One terminal of a bracelet with incised and ribbed ornament (3). One fragment of a ring-terminal bracelet (4). One fragment of a bracelet with hollow section and transverse ribs. Breuil 1907, fig. 8, 34. One ribbed tubular bead, Ibid., fig. 8, 36. One ring of twisted wire with sheet attachments, Ibid., fig. 9, 11. One large looped button, domed centre, peripheral flange, Ibid., fig. 10, 2. One conical looped button, Ibid., fig. 10, 3. One convex looped button, Ibid., fig. 10, 4. One ridged fitting with two loops, Ibid., fig. 10, 5. One fragment of perforated and incised plate, Ibid., fig. 10, 11. One loop from a bugle-shaped object, Ibid., fig. 12, 3. One concave-profile slide may belong to this hoard, Breuil 1900, fig. 6, 71. One razor with key-hole notch and multiple ring handle may belong to this hoard, Breuil 1901, fig. 3, 27.

Most of the socketed axes can be matched in the Plainseau hoard (178). The large everted terminal is probably from a bracelet of Lyzel type (see p. 210). The ribbed terminal with incised ornament can be matched in Breton hoards, e.g. Prairie de Mauves, Nantes, Loire-Atlantique (Briard 1966a, pl. 26), and in the Chedigny hoard, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 7, 15). The sheet attachments on the twisted wire ring are belt ornaments of Audouze's type 2 (1974, 248). The large bossed button is similar to examples in the

Graville hoard (174). The ridged fitting can be matched in the Bronze Final III hoards from Saint-Genouph, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 11, 22), Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 6, 105), and in the two hoards from Guidel, Morbihan: Kerhar (Marsille 1921, 83 no. 1377, pl. VIII, 24) and Kergal (*ibid.*, 84 no. 1409, pl. IX, 8).

180. Marlers, Somme.

Gaucher and Mohen 1974, Marlers, ill. 43-44.

Hoard, sometimes given the incorrect provenance, Fouilloy, Oise. Two fragments of flanged sword hilts. Breuil 1900, fig. 4, 36-37. Three fragments of sword blades, *Ibid.*, fig. 4, 38-40. Two fragments of Carp's Tongue swords, *Ibid.*, fig. 5, 59-60. Two lozenge-shaped terminals, *Ibid.*, fig. 6, 69-70. Two small bag-shaped terminals, *Ibid.*, fig. 6, 75. One fragment of a hexagonal-section tube, *Ibid.*, fig. 6, 74. One miscellaneous fragment, *Ibid.*, fig. 6, 66. One fragmentary double-edged tanged knife with two rivet-holes, Breuil 1901, fig. 2, 15. Fragments of three double-edged socketed knives, *Ibid.*, fig. 2, 16-17, 19. One straight single-edged blade, *Ibid.*, fig. 3, 21a. One fragment of a tanged saw, *Ibid.*, fig. 3, 22. One fragment of a sickle blade with two ribs, *Ibid.*, fig. 4, 37. One fragment of a valve of a bronze mould for socketed axes, Breuil 1902, fig. 1, 4. A bronze core for a socketed axe mould is attributed to the Marlers hoard by Breuil, *Ibid.*, fig. 1, 5. One socketed hammer, *Ibid.*, fig. 2, 4. One tanged leather-working knife, *Ibid.*, fig. 2, 10. One socketed tool with round socket and expanded blade, *Ibid.*, fig. 2, 11. Two fragments of socketed gouges, *Ibid.*, fig. 2, 12. One plain pegged spearhead, Breuil 1903, fig. 2, 6. One socketed axe with collar and single horizontal rib, Breuil 1905, fig. 6, 59. One socketed axe with broken mouth and four vertical ribs, *Ibid.*, fig. 6, 89. One faceted socketed axe, mouth broken, *Ibid.*, fig. 6, 94. One faceted socketed axe, Gaucher 1976, fig. 6, 8. One socketed axe with collar, single horizontal rib and plastic wing ornament, Gaucher and Mohen 1974, ill. 43. Various other socketed axes, *Ibid.*, ill. 40. Two looped winged axes, *Ibid.*, ill. 43. Breuil 1905, fig. 5, 57. One fragment of a penannular bracelet with a disc terminal, Breuil 1907, fig. 4, 10. One fragment of a penannular bracelet with hollow section, ribbed ornament and everted terminal, *Ibid.*, fig. 6, 21. One fragment of a penannular bracelet with hollow section, incised ornament and everted terminal, *Ibid.*, fig. 6, 22. Two hollow annular rings, *Ibid.*, fig. 9, 16. Various fragments of plate, *Ibid.*, fig. 11, 8, 11-12. Three bugle-shaped objects, *Ibid.*, fig. 12, 2. Casting jet.

The straight blade is probably from a Minnis Bay sickle (see p. 178). The socketed tool with an expanded blade appears to be a form more common in Britain (Inv. Arch. GB, 17, 16; 35, 7; Norwich 1966, pl. VII, 11) and Ireland (Eogan 1964, 298, fig. 12, 12) than in France (see p. 174).

181. Choisy-le-Roi, Val-de-Marne.

J.-P. Mohen.

Hoard. One socketed axe. One fragment of a winged axe. Two spearheads. One socketed chisel. One single-edged tanged knife. One single-edged socketed knife, Gaucher 1976, fig. 6, 3. One double-edged socketed knife. One fragment of a sheet-bronze bracelet with convex section and peripheral ribs. One fragment of a penannular bracelet with spaced transverse ribs and slightly everted terminal. One fragment of a penannular bracelet with incised ornament and everted terminal.

The sheet-bronze bracelet belongs to the Wallerfangen type (see p. 207-8) and the ribbed bracelet to the Homburg type (see p. 206). The bracelet with incised ornament may be compared to an example in the Ha B3 hoard from Hochstadt, Kr. Hanau, Hesse (Richter 1970, 161 no. 987).

182. Thiais, Val-de-Marne.

J.-P. Mohen; Duval 1961, 45-46, fig. 18.

Hoard. Three fragments of Carp's Tongue swords. Complete examples or fragments of seven penannular bracelets with ring terminals. Various socketed axes. Various bronze moulds for socketed axes. One fragment of a winged axe. One fragment of a socketed hammer. One fragment of a socket. Fragments of sheet bronze. Miscellaneous fragments.

183. La Bonneville, Civry-la-Fôret, Yvelines.

Forrer 1896.

Hoard. Five fragments of sword blades. Forrer 1896, figs. 8, 17-18, 34, 51. Five fragments of spearheads, including one decorated socket, figs. 1, 16, 35-36, 40. Twelve axe fragments, all probably from socketed axes, figs. 3-8, 23, 29, 39, 41, 50, 52. One blade fragment of a single-edged knife, fig. 11. One double-edged tanged knife with two rivets in the hilt, fig. 1. Two tangs with single rivet-hole, probably from double-edged knives, figs. 27-28. Two blade fragments, figs. 45, 48. One fragment of a hog's-back knife, fig. 27. One bified razor, fig. 19. One fragment of a penannular bracelet, solid section, incised ornament and everted terminal, fig. 14. One fragment of a penannular bracelet, solid section, collar and ring terminal, fig. 12. One fragment of a penannular bracelet, flat section with peripheral ornament, rolled terminal, fig. 13. One penannular bracelet, C-section with ring terminals, fig. 22. One fragment of a penannular bracelet with expanded terminal, fig. 21. One fragment of a penannular bracelet with C-section and everted terminal, fig. 42. One fragment of a penannular bracelet with incised ornament, fig. 43. One fragment of a bracelet with oblique ribbed ornament, fig. 56. Two ring terminals, probably from bracelets, figs. 33, 38. Two hollow annular rings, figs. 24, 25. One small penannular ring, fig. 10. Five fragments of Carp's Tongue plate and fittings, figs. 15, 30, 44, 53, 57. Two fragments of rolled sheet, figs. 46-47. One rod,

pointed at both ends, fig. 49. One fragment of a C-section looped ring, fig. 20. One thick disc with concentric ribbed ornament, fig. 32. One angular cast fragment with ribbed ornament. Two cast fragments, figs. 54-55. One casting jet, fig. 31. The C-section looped ring 20 can be matched in Bronze Final III hoards, e.g. Azay-le-Rideau, Indre-et-Loire (Cordier, Millotte and Riquet 1959, pl. 5, 85).

BELGIUM

184. Achtel, Rijkvorsel, Antwerp.

Mariën 1952, 225; Bauwens-Lesenne 1965, 144.

Hoard, found in a wooden box. Five or six looped socketed axes.

One axe of brown flint. One sandstone pounder.

Possibly LBA3.

185. Hoogstraten, Antwerp.

Moriën 1952, 219, 225, afb. 200, 4; Bauwens-Lesenne 1965, 74-75; Desittere 1976, 91. MRAH Brussels.

Hoard, of twenty looped socketed axes, thirteen are in the MRAH.

One axe with collar, single horizontal rib and panel of five short vertical ribs separated by grooves, Mariën 1952, afb. 200, 4. Eight similar axes. One axe with collar, single horizontal rib and ribbed wing ornament. Two axes with collar, single horizontal rib and pellet. One axe with collar and single horizontal rib.

All the axes have the square mouth and expanded blade characteristic of Belgian socketed axes. The panel of ribs can be matched on an axe of French form in the Plainseau hoard (178) 14. Both ribbed wing and pellet motifs occur on axes in the Jemeppe hoard (195).

186. Nieuwrode, Brabant.

Desittere 1963, 103; Mariën 1952, 219, 226.

Hoard. Five looped socketed axes with oval mouths and wing ornament.

Mariën (1952, 219) compares some of the Nieuwrode axes with the axe with plastic wing ornament from Sint-Katelijne-Waver, Antwerp (*ibid.*, afb. 200, 1); this suggests that the Nieuwrode hoard contained axes of lower Meuse type (see p. 164) and this has been accepted by Desittere (1974a, 116).

187. Port-Arthur, Ghent, E. Flanders.

Mariën 1950, 54-62; Inv. Arch. B1; Desittere 1974b, 145-146 no. 10.

Collection of objects found during the construction of a dock north-east of the city during the First World War; exact site and circumstances unknown. Mariën (1950, 55) has interpreted the find as a female inhumation burial because of the human skull fragment, bracelets and ear-ring. Desittere (1974b, 146) considers that the find was a hoard. The objects were gathered by a collector over a disturbed

area rich in antiquities Palaeolithic to Merovingian and were not passed to the University of Ghent until 1921. While Late Bronze Age inhumations are unknown in Flanders, several contemporary hoards contain personal ornaments. Two penannular bracelets, hollow-cast, oval section with large everted terminals backed by two ribs. Inv. Arch. B1, 1-2. One spiral, 3. One double spiral attached to a rectangular sheet with bossed ornament, 4. Two pendants, more than half a circle with tubular socket, central boss and peripheral rib, 5-6. One sub-biconical bead, 7. One convex bead, 8. One convex button with bar, 9. One basket-shaped ear-ring, 10. Thirty-seven annular rings, 11-47. One disc, irregular with central perforation surrounded by slight flange, 48. One small fragment of human skull. Mariën (Inv. Arch. B1) compares the double spiral to Nordic MV 'cloak clasps' (Sprockhoff 1956, 225, Taf. 54, 1, 6). The ear-ring can be matched in the Larnaud hoard, Jura (Chantre 1875, pl. L, 15-16).

188. Zandbergen, E. Flanders.

Mariën 1950, 62-64.

Probable hoard. One penannular bracelet, hollow-cast, oval section with large everted terminals. Mariën 1950, pl. VII, 1. One socketed axe with collar, single horizontal rib and indistinct plastic wing ornament, 2.

The form of the collar of the axe can be matched in the Jemeppe (195) 3 and Eprave (193) right hoards and the ornament by Jemeppe 5 and Eprave centre left.

189. Camp-à-Cayaux, Spiennes, Hainaut.

Mariën 1950, 41-46; Inv. Arch. B3.

Hoard, found during investigation of Neolithic flint mines (de Laet 1974, 156-161). One penannular bracelet, hollow-cast oval section with contingent large everted terminals. Inv. Arch. B3, 1. One fragment of a penannular bracelet, hollow-cast with tapering terminal, 2. One pendant, oval with tubular socket and central boss, 6. One fragmentary double ring with convex profile and three bosses on central band, 5. Two annular rings, 3-4.

There is a comparable double ring in the Vénat hoard, Charente (George and Chauvet 1895, pl. XXIV, 326).

190. Geistingen, Ophoven, Limburg.

Van der Weerd 1938; Mariën 1952, 225; Bauwens-Lesenne 1968, 278; Claassen 1971, 154-155; Butler 1973b, 340-341.

Hoard. Twenty-six socketed axes, all of Geistingen type (see p. Butler (1973b, 434 n. 25, nos. 5-6) probably lists two parts of the same hoard, but the quality of the association is uncertain.

191. Lommel, Limburg.

Claassen 1971, 153.

Hoard. Six socketed axes. Two bracelets. Possibly LBA3.

192. Petersheim, Lanaken, Limburg.

Bauwens-Lesenne 1968, 173; Claasen 1971, 153, fig. 4; Desittere 1974a, 120 no. 14; 1976, 91.

Possible hoard. Four socketed axes. One winged axe.

The presence of the winged axe suggests a LBA3 date. Three of the socketed axes are in the Städtisches Reiss-Museum, Mannheim, but no details are available.

193. Tiennes des Maulins, Eprave, Namur.

Mariën 1952, afb. 199, 2; 1961, 17, fig. 9; Desittere 1974a, 120; 1976, 91.

Hoard. One socketed axe with collar and single horizontal rib.

Mariën 1961, fig. 9, centre right. One socketed axe with collar, single horizontal rib and plastic wing ornament, fig. 9, right. One socketed axe with angular collar, two horizontal ribs and ribbed wing ornament, ribs joining on the sides of the axe, separate horizontal rib below, fig. 9, centre left. One winged axe, fig. 9, left.

The straight-sided blade of axe centre right resembles the English south-eastern type (see p. 161). The plastic wing ornament, right can be matched in the Zandbergen hoard (188) and on Jemeppe (195) 5. Eprave axe centre left has an angular collar like the Zandbergen axe and Jemeppe 3; its form can be matched on one of the axes in the Dreuil hoard (177) 8. The winged axe is probably of British or French origin (see p.159).

194. Trou de Han, Han-sur-Lesse, Namur.

Mariën and Vanhaeke 1965; Mariën 1961, 15-16, fig. 7; 1968-70; 1969; 1973a; 1973b; 1974; 1975.

To the north-west of the high Ardennes lies the Famenne depression into the east end of which flows the R. Lesse. South-east of Han-sur-Lesse this river passes through an outcrop of Devonian limestone and forms a series of caverns; it emerges at the Trou de Han by the Galerie des Petites Fontaines and the Galerie de la Grand Fontaine (Mariën and Vanhaeke 1965, plan inside front cover). Remains of human occupation from the Neolithic to Post-Medieval periods have been discovered. A little Bronze Age material is in the Musée Archéologique, Namur, but most is in the Musée du Monde Souterrain at Han-sur-Lesse, the result of diving and systematic excavation over the past two decades. Finds are still being made and a large amount of material is still to be processed in Han and in the MRAH Brussels. Mariën has published several provisional accounts and studies of individual objects. This survey incorporates brief examination of objects and drawings in Han and in Brussels, as well as information kindly provided by Dr. Mariën, but cannot be regarded as complete or authoritative.

Occupation at Han covered most of the late Bronze Age. Some pins and winged axes could be of Reinecke D date but may equally be Ha A1 (Mariën 1974, 225, fig. 1); material of Ha A2, Ha B1 and Ha B3 date is represented (*ibid.*, 226-231, figs. 2-5) but Ha C finds appear to be absent. Large quantities of coarse pottery and domestic objects, such as spindle-whorls, indicate substantial occupation of the site.

Seventeen socketed axes, some with ribbed wing ornament, more with relief wing ornament, Mariën 1974, 231; Mariën and Vanhaeke 1965, pl. 2. Five winged axes, Mariën 1974, 231. Sickles, Mariën and Vanhaeke 1965, pl. 3. One saw, Single-edged tanged knives. Mariën 1974, figs. 2-3. Single-edged socketed knives, *Ibid.*, fig. 4. One double-edged tanged knife. Three swords of Thames type, Mariën 1975, 14-17, figs. 1-2. Four small bag-shaped chapes, *Ibid.*, 17-18, fig. 1. Various spearheads, including one example with a long blade, Mariën 1973a, fig. 1, 1. Various ferrules, including one tubular example with disc terminal and an iron rivet, *Ibid.*, fig. 1, 2. Socketed arrowheads, barbed and tanged, Mariën 1974, 231. Bourget arrowheads, *Ibid.* Fish-hooks, Mariën and Vanhaeke 1965, pl. 4. Awls. Single-edged razors. Double-edged razors with tangs or multiple ring handles, *Ibid.*, pl. 6. Tweezers, *Ibid.* Pendants, including a crescentic example and circular examples with transverse tube, *Ibid.*, pls. 5-6. Various bracelets, including examples with everted terminals and spiral bracelets, but mostly plain, *Ibid.*, pl. 7. Various penannular gilded rings, *Ibid.* Fragments of a cast twisted neck-ring with tapering terminals. Buttons. Gold basket shaped ear-rings, Mariën 1968-70. Gold pendants, circular with concentric ornament, *Ibid.* About one hundred and eighty pins. Convex phalerae, one plain, one with a peripheral ring of bosses. One convex disc with central perforation. One bar-toggle. Annular rings. Glass beads. Cheek-pieces of organic material. Fine Urnfield pottery, Mariën 1973b. Coarse pottery, Mariën and Vanhaeke 1965, pl. 11.

Mariën (1974, 231 n. 6) appears to relate some of the socketed axes to the north Dutch type. All the socketed axes from Han appear to be of LBA3 date, while the winged axes are predominantly LBA1 median-winged forms. The single-edged tanged knives are LBA1 and 2 forms while the socketed knives are LBA3, probably related to contemporary Dutch knives (Mariën 1973b, 277). The spiral bracelet belongs to a type known in the Saarland; there are twelve examples in the Wallerfangen hoard, Kr. Saarlouis (Inv. Arch. F48(D), 38-49) and four in Brebach hoard II, Kr. Saarbrücken (Kolling 1968, Taf. 41, 5-8). The gold pendants are probably of early Urnfield date and the ear-rings may be contemporary (Mariën 1968-70). The convex phalerae may be compared with the example from the Trou del Leuve, Sinsin, Namur (Raepsaet-Charlier 1971, 38-40, fig. 5, 3). Plain convex phalerae were current in western Europe during LBA2 (see p. 149) but occur in LBA3 in the Amboise hoard, Indre-et-Loire (Cordier, Millotte and Riquet 1960, fig. 4, 53). The bossed phalera from Han may be compared to examples in a find from Blödesheim, Kr. Alzey, Hesse (von Merhart 1956, 34-35, Abb. 8, 7); Hermann regards this as a hoard of Ha B1 date (1966, 204) but it may not be a closed find (Richter 1970, 63). The ornament is reminiscent of Lake Village phalera but these rarely lack a central boss which is absent from the Han phalera (von Merhart 1956, Abb. 8, 2a). The convex disc with central perforation may be related to Guevaux discs (see p. 197). The hollow globular headed pin belongs to the Ha B3

Ockstadt form of middle Rhine origin (Kubach 1977, 506, n. 41). The fine Urnfield pottery includes beakers and bowls of Ha A2 date and middle Rhine origin (Mariën 1973b, 272, 274, figs. 2, 5-7) as well as vessels of Ha B1 date (*ibid.*, figs. 1, 3-4).

195. Trieu des Cannes, Jemeppe-sur-Sambre, Namur.

Mariën 1950, 46-54; Inv. Arch. B2; Desittere 1976, 91.

Hoard. Two bracelets, intended as penannular but miscast with terminals joined, hollow-cast oval sections with bands of transverse grooves and large everted terminals. Inv. Arch. B2, 1-2. One socketed axe with collar, single horizontal rib and plastic wing ornament, 5. One socketed axe with collar, single horizontal rib and ribbed wing ornament demarcated by a horizontal rib, 4. One socketed axe with angular collar, two horizontal ribs and double ribbed wing ornament forming U-shape on sides of axe, 3. One socketed axe with collar, single horizontal rib and pellet with bell-shaped facets on blade, 6. Three beads of spiral wire, 7-9. One tubular bead with transverse incised ornament, 10. Two convex profile beads, 17-18. Three small beads, 19-21. One fragmentary bead with remains of constriction, 22. One sheet bead, 23. Six annular rings, 11-16. One casting jet, 24.

Axe 5 with plastic wing ornament can be matched by the axe in the Zandbergen hoard (188) and by Eprave (193) right. The ribbed wing ornament demarcated by a rib, 4, is similar to that on an axe from Turnhout, Antwerp (Mariën 1952, afb. 200, 2), and on axe centre left in the Eprave hoard. The overhanging collar on the axe with double ribbed wing ornament, 3, occurs on the axe in the Zandbergen hoard and on Eprave centre left; the ornamental motif can be matched at Han (Mariën and Vanhaeke 1965, pl. 2). Single pellet ornament 6 appears on two axes in the Hoogstraten hoard (185) and the form of the Jemeppe axe can be matched at Han (Mariën 1950, 51 n. 33).

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196. Deurne, N. Brabant.

Butler 1963a, 126, fig. 35; 1969, foto 26.

Probable hoard. One socketed gouge. One socketed chisel. One socketed tool with expanded blade.

These tools could all be of western origin. Socketed gouges are more common in western than in northern Europe (see p. 175-6). The broad-bladed tool can be matched in Britain and in Ireland (see p. 174); this form of tool does not appear to be common on the continent, though there is an example in the Marlers hoard (180). The contents of this hoard could all be of British origin.

197. Stiphout, N. Brabant.

Butler 1963a, 85 no. 13; Desittere 1976, 91.

Hoard. One socketed axe with ribbed wing and pellet ornament. One socketed gouge. Two lost socketed gouges.

The axe belongs to the Plainseau/south-eastern type (Desittere 1976, 91).

198. Bargeroosterveld 1896, Drenthe.

Butler 1960a, 122, fig. 52.

Hoard, found in or before 1896. One socketed axe with biconical collar and two shallow notched horizontal ribs separated by a deep rib; the large loop springs from below these ribs to the collar; the blade has arched facets outlined by hammered grooves. Butler 1960a, fig. 52. One socketed axe with shallow collar and six shallow horizontal ribs, alternate ones notched; on the upper part of the blade there is a drum-shaped swelling with peripheral notched ribs; the angular loop springs from the upper part of this swelling to the collar. The first axe belongs to the north Dutch type (see p. 164). The second is probably a local copy of the Nordic MV Seddin type (Sprockhoff 1956, I, 92-93; Baudou 1960, 25-26); looped examples occur west to the Rhine in Germany (Sprockhoff 1956, II, 22-23, Karte 9) and another Seddin axe is listed from Elzen, Overijssel (*ibid.*, II, 23 no. 14). Both Bargeroosterveld 1896 axes are related by their notched ribs.

199. Bargeroosterveld 1900, Drenthe.

Butler 1960a, 105-106, fig. 49; Inv. Arch. NL16.

Hoard, purchased by Assen Museum in 1900. One narrow-bladed looped palstave with low flanges. Inv. Arch. NL16, 1. One fragment of the butt of a palstave with low flanges, 2. Two fragments of a single-edged knife with convex back, two ribs and a thick tang, 3. Three fragments of a bracelet, narrow with longitudinal midrib, 4. A pair of annular kidney-shaped bracelets with false terminals expanded outwards; the terminals bear ridges with transverse lines of notches and are flanked by transverse grooves, 5-6. One 'small rod or pin', now lost.

The palstaves both belong to the British late type (see p. 132). The complete example can be matched for form and size in the Forty Acre Brickfield hoard, Worthing, Sussex (Inv. Arch. GB37, 7); the fragment, with a more angular septum, can be matched in the Guilsfield hoard (131; Savory 1964-66, fig. 1, 9) and in the Isleham hoard (127; Fig. 43, 15). The knife appears to be undiagnostic (see p. 100). Tackenberg (1971, 105-106) suggests that it may be of south-west German Urnfield origin. Butler (1960a, 110) compares the ribbed fragments of bracelet with Nordic MIV Armspiralen (Sprockhoff 1937, 50, Taf. 14, 7, 11) with longitudinal ribs. Baudou distinguishes two forms: with flattened terminals, found often in Denmark and southern Sweden but rarely in northern Germany, MIV (1960, 60, Taf. XII, XVII A1); with hooked terminals, found in Denmark and northern Germany MV (*ibid.*, 60, Taf. XII, XVII, A2). The complete bracelets are Nierenringe of north-west German origin; the false terminals bear ridged ornament reminiscent of that on better-defined false terminals (Tackenberg 1971, 215-216, Taf. 40, 1-2).

Butler (1960a, 107) dated this hoard to MIV but Tackenberg considers that the annular bracelets are typologically late and belong to MV (1971, 4, 216), cf. the pair in a Ha B3 hoard from Nieder-Olm, Kr. Mainz, Rheinland-Pflaz (Richter 1970, 170 nos. 1079-1080, 172-173). The fragmentary bracelet could also be of MV date and a LBA3 date cannot be excluded for the palstaves (see p. 133).

200. Bonnerveen, Gieten, Drenthe.

Butler 1965, 182 n. 18; Sprockhoff 1966, Abb. 4, 2 (the caption refers to the museum, not the provenance).

Hoard. One brooch of Nordic type with decorated plates joined by a curved bow. Sprockhoff 1966, Abb. 4, 2. Two other objects, one lost.

The brooch probably belongs to the same type as that in the Drouwen find (201).

201. Drouwen, Borger, Drenthe.

Jacob-Friesen 1956, 135 n. 16, Abb. 16; Ypey 1960-61; Butler 1965, 177-184, 191 no. 1, 198, figs. 1-2, 13-14, pls. I-II; 1969, 120-123,afb. 52, foto 36.

Group of bronzes found in the ditch of a ring-ditch in a Late Bronze Age Urnfield. It is possible that this find, the richest of the Dutch Bronze Age, was a burial rather than a hoard (Butler 1969, 122-123).

Fragments of a cast-bronze bowl, convex body, broad angular shoulder, slightly conical neck with two upright handles on the rim. There is a boss surrounded by two peripheral ribs on the base; the body is divided into two zones by a triple horizontal rib, both zones bear curvilinear ornament of incised lines and pointillé. There is a triple rib below the shoulders, a single rib in the neck angle and a double rib at the rim; all the horizontal ribs are notched. The handle bears horizontal grooves. Ypey 1960-61; Butler 1965, fig. 13. Part of a Nordic brooch with a decorated plate and a curved bow, fig. 14. Two north Dutch omega bracelets, convex section, everted terminals backed by three ribs, fig. 1, pl. II. One fragment of a north Dutch omega bracelet with everted terminal, fig. 1. Three north Dutch omega bracelets with longitudinal ribs and everted terminals backed by transverse ribs, fig. 2. Six spiral bracelets of recurved wire. Jacob-Friesen 1956, Abb. 16, d-f. Fragments of a bracelet, probably annular, with irregular outward protrusions, Abb. 16, m. Many beads, mostly spiral, some convex, Abb. 16, r-s. Two sub-rectangular plates with on one side a longitudinal ridge with seven perforations, Abb. 16, p. Two objects resembling clockwork keys in form, decorated oval plates with projecting sockets and five loops on the underside, Abb. 16, q. One convex looped button, Abb. 16, n. One rod with many small perforations, Abb. 16, o. Two fragments of rod, Abb. 16, t.

Sprockhoff promised a monograph on Nordic cast-bronze bowls (1956, 241 n. 3) so subsequent treatment has been cursory (Baudou 1960, 69), but only a part of the catalogue has yet been published (Höckmann 1974). The Drouwen bowl is of MV date (Thrane 1975, 226). These bowls are found outside the Nordic area as far as the Lake Village of Corcelettes, Vaud, and the Petit-Villatte hoard, Cher (*ibid.*, 283, Fundliste 18, fig. 128). North-west German finds have been discussed briefly by Höckmann (1976, 134). There are two from the area adjacent to Drenthe: Rheda, Kr. Wiedenbrück, Westphalia, upturned over the cremated remains of a child (Langewiesche 1912), and Glesen bei Emsburen, Kr. Lingen,

Lower Saxony, also with a burial (Sprockhoff 1937, 136, Taf. 24, 7). These finds support the proposition that the Drouwen find was a burial. The brooch belongs to Laux's Oerel type of MV (1973, 50 n. 4). Nordic brooches reach as far as Lake Villages in the south-west and Romania in the south-east (Thrane 1975, 224-227, 283 Fundliste 18); the only other Dutch example is in the Bonnerveen hoard (200). Sprockhoff illustrates the Drouwen fragment (1966, Abb. 4, 1) but his caption refers to the museum not the provenance. Spiral bracelets of recurved wire occur in northern Germany during MV (Sprockhoff 1956, I, 177; II, 86, Karte 35, Taf. 37, 1-2, 5) but this form of ornament had a long currency in the Nordic area (Baudou 1960, 60-61). Butler (1965, 198) describes the sub-rectangular plates as kralensnoerverdelers, "bead-string dividers", presumably resembling spacer-plates in function, and possibly to be associated with the many beads in the Drouwen find. Similar objects occur in the MV hoard from Ostrhauderfehn, Kr. Leer, German Friesland (Sprockhoff 1956, 274, Abb. 62, 8). The 'keys' appear to be unique (Butler 1965, 198).

The Drouwen 'princess' burial, together with the bowl burial from Rheda and a burial with a sheet-bronze amphora at Gevelinghausen, Kr. Meschede, Westphalia, are considered by Jockenhövel (1974b, 46-47) to represent social stratification, reflecting warrior burials of eighth-century Italy, Ha B3 central Europe and the MV Königsgrab of Seddin, Kr. Perleberg, Brandenburg.

202. Het Lok, Havelte, Drenthe.

Butler 1961b, 233 no. 34, fig. 14, pl. IV; 1968-69, 223; 1969, afb. 43. Hoard. One socketed axe with denticulated collar, large loop, multiple horizontal ribs, facets on the faces of the blade and hammered grooves on the sides. One socketed axe with biconical collar, large loop, deep plastic wing ornament and facets on the faces of the blade. One fragment of a single-edged socketed knife with decorated socket and blade. One casting jet.

The axes belong to the north Dutch type (see p. 164-5).

203. Hijken, Beilen, Drenthe.

Butler 1965, 185-186, 191 no. 2, figs. 9-10.

Hoard. One fragmentary north Dutch omega bracelet with convex section and everted terminals backed by three ribs. Butler 1965, fig. 9. Three fragmentary north Dutch omega bracelets with broad bodies bearing longitudinal ribs and everted terminals backed by transverse ribs. Ibid. Two fragmentary Odoorn bracelets. Ibid., fig. 10. Two convex buttons with bar attachment. Ibid. One cast disc with peripheral rib, ring of bosses and central perforation. Ibid.

The function of the disc appears to be uncertain; Butler (1965, 185-186) compares the late Tumulus pin from burial g at Elp (76).

204. Oud-Schoonebeek, Drenthe.

Butler 1961b, 232 no. 17-18, fig. 21; 1968-69, 223; 1969, afb. 44, foto 28; Sprockhoff 1955, 88, Abb. 47, 2.

Hoard. One socketed axe with angular collar, large loop and hammered grooves on the sides of the blade and forming wing ornament on the faces. Butler 1961b, fig. 21. One socketed axe with angular collar, single horizontal rib, plastic wing ornament, hammered grooves on the sides of the blade and facets on the faces, *Ibid.* One plain pegged spearhead, *Ibid.* One plain single-edged socketed knife with straight blade, ornamented back and ribbed socket, *Ibid.* One socketed terminal with two rivet-holes and bands of lines and V-motifs, horned terminal with five rings, one broken, the central three supported by rods. Butler 1969, foto 28.

The axes belong to the north Dutch type (see p.164). Plain spearheads occur in Nordic MV hoards (Jacob-Friesen 1967, 275). Sprockhoff (1955, 88) describes the terminal as a Schwertgriff, though its use remains uncertain; he interpreted the terminal as a devolved version of the 'sun-bird-boat' motif and compared a terminal in a hoard from Heegermühle, Kr. Eberswalde, Brandenburg, but this hoard belongs to a group characterised by von Brunn's Garnitur Lubz of Reinecke D/Ha A (1968, 215, 283).

205. Bruggelen, Apeldoorn, Gelderland.

Butler 1965, 186, 191 no. 4, fig. 11; 1968-69, 223.

Hoard. One complete north Dutch omega bracelet, undecorated, and one fragment. Fragments of two north Dutch omega bracelets with longitudinal ribs. One fragment of a single-edged socketed knife. One fragment of rectangular-section rod.

206. De Dellen, Heerde, Gelderland.

Elzinga 1957-58; Butler 1963a, 134-135; Jacob-Friesen 1967, 277, 379 no. 1729, Taf. 176, 1-5.

Hoard. One pegged spearhead with long socket and angular, slightly flame-shaped blade. Elzinga 1957-58, afb. 3, 3. One tubular ferrule, tapering slightly to a disc terminal with two ribs above, afb. 3, 4. One pin, separate hollow-case head, spherical with perforations, afb. 3, 1. One similar pin with irregular sub-biconical head, afb. 3, 2.

Elzinga considered that the spearhead was related to the earliest iron examples and so dated the hoard to the end of MV (1957-58, 21-24). Jacob-Friesen compares bronze spearheads in the hoard from Nemmin, Kr. Schwelbein, Pomerania, which also contained iron objects and should be dated to MV or MVI (1967, 277, 369 no. 1493, Taf. 176, 8-13), but dated the De Dellen hoard to Ha B because of its "Lake Village" pins. Kubach places these pins in his Ockstadt form of Ha B3 date (1977, 506 n. 34); this form appears to be of middle Rhine, rather than Lake Village, origin (*ibid.*, 508, Taf. 107, B). The ferrule can be matched by an example from Han (Mariën 1973a, fig. 1, 2), presumably of LBA3 date because of the lack of Ha C material at Han.

207. Onstwedder Holte, Groningen.

Butler and van der Waals 1960, 93, figs. 44-45; Butler 1968-69, 217-219.

Hoard. One socketed axe with angular collar, two horizontal ribs and large loop. Two annular rings, cast intertwined, tear-drop section, hatched triangle ornament. Two penannular bracelets, probably a pair, sub-rectangular section, expanded terminals, bands of transverse ornament, lines of double pointillé ornament. Two larger penannular bracelets, probably a pair, sub-rectangular section, expanded terminals backed by transverse ornament, lines of double pointillé ornament.

The intertwined rings can be matched in the hoards from Nieder-Olm Kr. Mainz, Rheinland-Pfalz (Tackenberg 1971, 216, Liste 120, 6, Taf. 14), Rheda, Kr. Wiedenbrück, Westphalia (*ibid.*, 53 n. 187), and Ostrhauderfehn, Kr. Leer, German Friesland (Sprockhoff 1956, 50, Abb. 53, 8). Tackenberg dates these hoards to MV, with possible retardation to MVI (1971, 52-53, 216-217); the Niederolm hoard was dated to Ha B2 by Hermann (1966, 204), but to Ha B3 by Richter (1970, 172-173). Thrane (1975, 126) considers that these rings were Ha B3 Urn-field products like Lake Village sets with T-shaped projections (Munro 1890, fig. 14, 2, 4; van Muyden and Colomb 1896, pl. XXIX, 11, 18). The bracelets belong to the Odoorn type (see p. 209) and can best be matched by a pair in the Ostrhauderfehn hoard (Sprockhoff 1956, 209, Abb. 53, 1).

208. Heiloo, N. Holland.

Brunsting 1962.

Hoard. Four flint sickles. Brunsting 1962, pls. XXXVIII-XXXIX.

One bronze sickle, slightly curved with a single rivet-hole in the plain tang, fig. 2.

A variety of bronze sickles with rivet-holes in the tang is known from Britain (Fox 1941, 138-139, figs. 1; 2, 16; Willett 1954, fig. 1, bottom). All have the tang differentiated from the blade, if only slightly, unlike the Heiloo bronze sickle. These British sickles are heterogeneous in form and the Heiloo sickle may have British relations rather than the more exotic ones suggested by Brunsting (1962, 110-115).

There is independent evidence for the use of flint sickles during the Early Iron Age in the Netherlands (Groenman-van Waateringe and van Regteren Altena 1961). In German Friesland, three flint sickles were found with a hoard of bronzes at Plaggenburg, Kr. Aurich (Maier 1974, 39, Abb. 23); the bronzes were dated to MV by Sprockhoff (1956, 51) and to MVI by Tackenberg (1971, 44-45) so a date in LBA3 or LBA4 is possible for the Heiloo hoard. Curved flint sickles are known from the British Neolithic and Early Bronze Age (Clark 1932-34). Smaller blades may have been employed during the later Bronze Age; there is an unstratified example from the site at Green Lane, Farnham, Surrey (Lowther 1939, 194-197).

209. Berg-en-Terblijt, Limburg.

Mariën 1952, 226, afb. 208; Butler 1973b, 339, Abb. 14.

Hoard. One looped socketed axe with collar, large loop and plastic wing ornament. Butler 1973b, Abb. 14, 4. Two unlooped winged axes, 14-15. One socketed chisel, 3. One plain pegged spearhead, 2. One fragment of a long spearhead blade, 1. Three knobbed sickles with two ribs, 16-18. Two fragmentary spiral armlets, thin D-section, 5-6. One fragment of twisted wire, 10. Five spirals of wire with groups of triple transverse lines and one fragment, 7-9, 11-13. An unlooped lower Meuse palstave is illustrated by Mariën (1952, afb. 208) but this may not belong to the hoard (Butler 1973b, 329 n. 13).

The socketed axe belongs to the lower Meuse type (see p. 194). The winged axes may be compared to examples from Han (Mariën 1961, fig. 7) and from Dalheim and Menil-Favai in the Grand Duchy of Luxemburg (de Laet 1974, fig. 163; Mariën 1952, afb. 251). These axes may be contemporary with the LBA2 winged axes in the Caix hoard (140). The sickles may be compared to Belgian examples from Ny and Grandes Malades, Namur, and could be of LBA3 date (see p. 177). The fragmentary spearhead belongs to the large type (see p. 181). Spiral armlets were a Nordic Late Bronze Age form which persisted to the end of MV in northern Germany (Sprockhoff 1956, 172, Abb. 49, 8-9). The ornamented spirals are unusual.

This hoard cannot be dated with precision; it could be LBA2 or LBA3 (Butler 1973b, 339).

210. Susteren, Limburg.

J. J. Butler.

Hoard. Three socketed axes of uncertain type.
Probably LBA3.

211. Elzen, Markelo, Overijssel.

Butler 1965, 186, 191 no. 3, fig. 12.

Hoard. Two north Dutch omega bracelets with longitudinal grooves. One penannular cast twisted ring with plain terminals. One annular ring with a spiral of wire attached. One fragment of recurved wire. One fragment of the blade of a socketed axe with hammered grooves on the sides.

Both rings are probably bracelets. The recurved wire could be from a spiral ornament, like those in the Drouwen find (201), or from a bracelet with hooked terminals (see p. 212). The axe fragment belongs to a north Dutch socketed axe (see p. 194).

212. Elzener Veen, Overijssel.

Butler 1961b, 232 no. 23, fig. 19, left; 1968-69, 223.

Hoard. One socketed axe with angular collar, two horizontal ribs and large loop; plastic wing ornament with hammered grooves, pellet ornament and facets on the faces of the blade. One fragment of a single-edged socketed knife.

The axe belongs to the north Dutch type (see p. 194).

BRITAIN

213. Wicken Fen, Cambs.

Ridgeway 1919, 161, figs. 8-9. CMAE 27 610 A-B. Fig. 72A.

Hoard. One linear-faceted axe with collar and single horizontal rib, triple vertical ribs. Fig. 72A, 1. One linear-faceted axe with collar and single horizontal rib, quadruple vertical ribs with broad central rib, 2.

214. Blandford, Dorset.

Evans 1881, 127, 175, fig. 146. BM; Dorset County Museum, Dorchester. Fig. 72B.

Hoard. In the BM: two socketed gouges. One linear-faceted axe (BM 68 8.5 8) of thin metal, collar and single horizontal rib, triple vertical ribs. Fig. 72B, 1. In Dorchester Museum (1902.129) is a linear-faceted axe of almost identical form which should be one of the "dozen or more" from this hoard mentioned by Evans (1881, 127), 2.

215. Portland, Dorset.

BM. Grinsell 1968, 41 no. 68f; Moore and Rowlands 1972, 26 n. 6, 30 n. 29.

Hoard. Eleven linear-faceted axes. Three are in the BM and have a central vertical rib and pellet terminals on the other vertical ribs.

216. Thorney Down, Sixpenny Handley, Dorset.

Farrar 1952, 109; Moore and Rowlands 1972, 26 n. 6, 30 n. 29.

Hoard. Seven socketed axes, apparently linear-faceted. Five socketed gouges. Records in Dorset County Museum, Dorchester, state that four of the axes and four of the gouges were from the same moulds. The hoard was not available.

217. Leckwith, Cardiff, Glamorgan.

Nash-Williams 1933; Savory 1976a, 53, fig. 10B.

Hoard. One socketed axe with collar, single horizontal rib and three vertical ribs with pellet terminals. Savory 1976a, fig. 10B, 9. A fragment of a similar axe, 8. Four socketed leather-working knives with conical sockets and triangular blades, 1-4. One socketed sickle with rectangular-section socket and broad midrib on the blade; the line of the rib continues along the top of the socket, 10. One sickle blade with three convergent ribs, 11. One razor, single-edged triangular blade with triangular perforation and loop, 7. One tanged razor with roughly circular blade and triangular perforation, 6. One cylindrical casting, closed at one end, with two large opposed perforations, 5.

The complete axe belong to the Sompting type (Burgess 1967-70, 270). The triangular razor is related to the double-looped example in the Llyn Fawr hoard (218); the circular-bladed razor, of the same form as the Putney razor (List 268, 3) is related to Belgian circular-bladed razors. The leather-working knives are the only associated examples of Roth's type IV known from the British Isles (see p.239). The complete sickle belongs to the heeled form also present at Llyn Fawr. The cylindrical casting has often been interpreted as the terminal of a chariot-pole (Nash-Williams 1933, 300; Burgess 1968a, 43; Savory 1976a, 21, 53). Eight pieces of similar size, though open at both ends, were found in burial XLVI at Hradenín, Bohemia (Dvorák 1938, 86, Abb. 44, 5), but these were probably elements of horse-harness rather than fittings for the wagon. Surviving pole-caps appear to be more elaborate than the Leckwith cylinder (Drack 1958, 39-40, Abb. 35; 37, 37). Later finds suggest that the upright piece set in the pole to attach it to the yoke was placed further back than would be possible with the Leckwith cylinder (Fox 1946, 23, fig. 12; Klindt-Jensen 1949, figs. 58-59). The pole-cap interpretation is not certain and a wheeled vehicle of LBA4 date would probably have been a four-wheeled wagon rather than a two-wheeled chariot.

218. Llyn Fawr, Rhigos, Glamorgan.

Crawford and Wheeler 1920-21, 133-137; Fox and Hyde 1939; Savory 1976a, 19-21, 46-47, 53-55, figs. 4, 10C, 11, pl. I, b.

Hoard. One socketed axe with collar and three vertical ribs. Savory 1976a, fig. 11, 1. Two socketed axes with collar and five vertical ribs ending in pellets, 2-3. One socketed axe with collar and three vertical ribs ending in pellets and a pellet on each angle, 4. One slender socketed axe with collar and single horizontal rib, 5. One fragment of a ribbed socketed axe. One socketed sickle with midrib on blade continuing the line of the top of the socket, 7. One socketed sickle with midrib on blade continuing the line of the top of the socket, 6. One sickle of steel (J. P. Northover) with broad midrib on the blade which continues the line of the top of the socket, 8. Three socketed gouges, 9-11. One single-edged razor, triangular blade with triangular perforation and double-loop handle, 12. One hollow winged object, 13. A fragment of another. Convex side closed, transverse slot in apex, concave side closed above this slot but wings open and upstanding with two pairs of rivet holes in each wing; the wings end in discs with concentric ribbed ornament and central boss. One plate; along one side five discs with concentric ribbed ornament and central boss; this side is marked by a single rib, the other by a double rib. A single rib and a double rib delineate a central panel with six rectangular slots. There are three loops on the back, 14. One rectangular terminal, open at one end with two rivets, closed at the other end with a hook; criss-cross pattern of incised ornament, 15. One socketed spearhead of iron, leaf-shaped lozenge-section blade and solid conical socket, 16. One phalera, flattened dome with flange and rolled rim, cast loop through central perforation. Ibid., fig. 10C, 1. One phalera, flattened dome with peripheral rib,

flange and rolled rim, cast loop through central perforation, 2. One phalera, flattened dome with peripheral rib, flange and rolled rim; a central depression has a perforation through which passes a peg on a cast loop, a cast boss secures this peg over a concave sheet disc with a ribbed rim, 3. Part of an iron sword, broad midrib flanked by single ribs which diverge into triple ribs towards the butt; deep ricasso. Bone hilt-plates over slightly concave shoulders; swollen hilt with broadest point below centre. Six rivets in the shoulders; three in the grip. *Ibid.*, fig. 4. One cauldron of five tiers of sheet bronze with conical rivets, high shoulder, everted neck reinforced by tube in angle, rolled rim. Two ring handles held by staples cast onto inside of neck. *Ibid.*, pl. I, b. One cauldron of five tiers of sheet bronze with round and conical rivets, high shoulder, everted neck, rim rolled around a tube. Two ring handles cast onto the inside of the neck and supported by struts outside. This cauldron was found c. 60 m north-west of the main deposit. Savory 1976a, figs. 2-3; Fox and Hyde 1939, pl. LXXII.

Both of the cauldrons belong to Class B1 (Hawkes and Smith 1957, 187). The phalerae are continental Ha C forms most common in Bavaria but also known in Belgium (O'Connor 1975, 222). The decorated axes belong to the Sompting type (Burgess 1967-70, 270). The razor is related to the triangular example in the Cardiff hoard (217). The section of the sword blade, with ribs diverging towards the butt, marks it out as an iron version of the bronze Mindelheim type of Ha C (see p. 240). The proportions of the iron spearhead can be matched by the example in Court-Saint-Etienne barrow 3 (228); if related to continental iron spearheads, it should be no earlier than Ha C2. The hooked terminal is presumably a strap-end and may be compared to a form known in the Jura (Wamser 1975, 51, Taf. 14, 2). The plate is probably a yoke-mount; the discs relate it to the winged objects. The yoke-mount is probably of Ha C1 date (see p. 255). The winged objects are probably cheek-pieces (Alcock 1961).

219. Claughton, Lancs.

Davey and Forster 1975 nos. 99-101.

? Hoard. One pegged spearhead with long, damaged blade, no. 101. One Yorkshire socketed axe, no. 99. One linear-faceted axe with collar, single horizontal rib, short central rib and two vertical ribs, no. 100.

The linear-faceted axe appears to be the example mapped by Moore and Rowlands (1972, fig. 2) as an isolated find. Burgess and Miket include this find as a hoard on their map of Yorkshire axes (1976, fig. 2).

220. Paston, Norfolk.

Norwich 1966, 29; Rowlands 1976, 250 no. 96, pl. 3. Norwich Castle Museum 27.947. Fig. 72C.

Hoard. Three MBA palstaves. One socketed axe with deep collar and ill-defined horizontal ribs; square-section blade with double vertical rib at each edge of the faces. Fig. 72C, 1.

This is not a characteristic linear-faceted axe, its form is more like that of a south-eastern axe.

221. Watton, Norfolk.

Norwich 1966, 31, fig. 58. Norwich Castle Museum 30.959. Fig. 73A. Hoard. Seven linear-faceted axes; pace Norwich (1966, 31) these are not all from the same mould, cf. Norwich (1977, 37). Three axes with quadruple ribs may be from one mould. Fig. 73A, 1. The other three axes in Norwich Museum, with triple ribs, are all from different moulds, 2-3.

222. Adabrock, Isle of Lewis, Ross.

Coles 1959-60, 48-51, 127, pl. V, 2. Nation Museum of Antiquities, Edinburgh DQ211-227. Fig. 73B.

Hoard. One socketed axe with sub-rectangular body. One faceted socketed axe. One pegged spearhead. One broad socketed gouge. One socketed hammer. One tanged leather-working knife. One double-edged tanged razor. Two double-edged tanged bifid razors with small circular perforations and ribs on the upper part of the tang. Two fragments probably from the same sheet-bronze vessel. One is from a rim with a slightly inturned profile; there are three grooves below the rim with pendant hatched triangles. Two certain rivet-holes remain, one above the other; other notches and perforations may not be rivet-holes. The second fragment has the remains of a curved and a large notch which may be the site of a rivet-hole. Fig. 73B, 1-2. One two-piece gold bead. Two amber beads. One blue glass bead. Two trapezoidal whetstones, one of sandstone one of claystone.

Only the fragments of the bronze vessel call for comment here. All the other bronzes appear to be insular and could be LBA3. The amber bead can be matched in LBA3 contexts (see p. 223). The glass bead does not appear to be of chronological significance (Coles 1959-60, 50). Coles' suggestion that the Adabrock fragments belong to a B2b bowl with cruciform handle-attachments (*ibid.*, 49-50, fig. 5) seems to be supported, not by arguments about the profile of the vessel, its ornament or the position of its rivet-holes for the handle attachments, but by the vertical pair of rivet-holes. This configuration is unknown for handle attachment on any type of Urnfield or Hallstatt vessel and is probably for a seam in the body of a vessel constructed of more than one sheet and such are vessels of von Merhart's group B2b (1952, 4), though I can find no specific indication that any has a vertical seam. This should, however, distinguish the Adabrock bowl from any other of von Merhart's groups, all of which are made from a single sheet without any seam.

Finds of B2b bowls are more westerly than B1 or B2a, reaching from Italy through the eastern Alps to Scandinavia (*ibid.*, 64, Karte, Taf. 4; 5, 1-5). Von Merhart suggests the eastern Alps as the workshop centre (*ibid.*, 13). While the Italian and central European finds are of Ha C date, the Nordic finds are MV (*ibid.*, 6; Thrane 1975, 149-150) and Thrane argues for an origin in Ha B3 (*ibid.*, 150; Müller-Karpe 1959, 130). Thus, a Ha C date for the Adabrock bowl is not certain and its chronology does not merit the emphasis placed upon it by Coles (1959-60, 55) as eponymous for a phase of Hallstatt influence in Scotland.

223. Sompting, Sussex.

Curwen 1948. Worthing Museum. Fig. 73C.

Hoard. One fragmentary cauldron, probably of broad convex profile, made of four tiers, the uppermost everted to form the neck which has three ribs; the rim is formed of separate sheets rolled into four tubes slotted onto the neck. Lenticular pieces are cast on at the junctions of these tubes. The two ring-handles are attached by cast staples riveted onto the inside of the neck which is supported by struts at these points. There are remains of many repairs. Curwen 1948, figs. 1-2, pls. XVIII-XIX. Fragments of at least one other cauldron. Part of a phalera, lacking the apex. Concave-profile conical boss of two stages separated by a rib, flange with a rolled rim, *Ibid.*, fig. 5, pl. XXIb. Two linear-faceted axes with triple ribs ending in a pellet and a central ring. Probably from the same mould. Fig. 73C, 1. Four socketed axes with four ribs ending in pellets. Probably from the same mould. One bears traces of iron rust. Curwen 1948, pl. XX, 1-4. One socketed axe with three vertical ribs, pl. XX, 8. One plain socketed axe, pl. XX, 7. One socketed axe with faint ribs, pl. XX, 9. One plain socketed axe, pl. XX, 10. Two plain socketed axes from the same mould, fig. 6, pl. XX, 11-12. One socketed axe with three divergent ribs ending in ring-and-pellet motifs; on the upper part of the central rib are two double-ring-and-pellet motifs, pl. XX, 13. One plain socketed axe, pl. XX, 14. One socketed axe with five vertical ribs ending in pellets, pl. XXI, 15. One socketed axe with five vertical ribs, pl. XXI, 16. One plain socketed axe, pl. XXI, 17.

The more complete cauldron belongs to class B2 (Hawkes and Smith 1957, 188) and is the only associated find of this class. The phalera is a central-European form most common at Hallstatt itself. The function of this form of phalera is controversial (O'Connor 1975, 222-224); it is dated to Ha C2 by Peroni (1973, 36, fig. 5, 10). The axes are eponymous for the Sompting type (Burgess 1967-70, 268). Curwen (1948, 163) notes the absence from the Sompting hoard of the late palstaves common in LBA3 hoards in west Sussex.

224. Melksham, Wilts.

Devizes Museum. C. Gingell.

Probable hoard. Five spearheads, three bronze and two iron. The tip of a blade, possibly from a sword, but unusually pointed.

The date and significance of this hoard are uncertain pending publication but it should provide further evidence for the overlap between bronze and iron technology.

NORTH-EASTERN FRANCE

225. Lille area, Nord.

Mohen 1972, 455, fig. 6; Gaucher and Mothen 1974, 116, Lille 9.

Hoard. Twenty-four Armorican socketed axes of Tréhou type. Two fragments of bronze.

226. Lille Museum, Nord.

Mohen 1972, 455-456, fig. 7; Gaucher and Mohen 1974, 116, Lille 12. Hoard. Two fragments of Armorican socketed axes of Dahouët type. Mohen 1972, fig. 7, 3 below, 4. Four fragments of Armorican socketed axes of Tréhou type, 1-2, 5-6. Two fragment of socketed axes of Plainseau or type atlantique, 3 above, 8. One fragment of hollow-section bracelet, 10. One fragment of sword hilt, 11. One fragment of a spearhead, 12. One fragment of a Carp's Tongue plaque, 13. One fragment of a sickle blade, 14. One fragment of a socketed axe with vertical rib ornament, 8. One miscellaneous fragment, 9. Five fragments of plate and three other fragments, 15-17, 19-20. One ingot fragment.

This mixed hoard contains objects predominantly of LBA3 date though the presence of Armorican socket axes should place it at least at the transition to LBA4. Mohen (1972, 456) attributes the sword hilt to the Carp's Tongue type though it could also be a Ewart Park type.

227. Boulogne Museum, Pas-de-Calais.

Mohen 1972, 458-461, fig. 9; Gaucher and Mohen 1974, 111, Boulogne-sur-Mer environs 4-19.

This group of Armorican socketed axes from the Boulogne area includes examples from hoards from Marquise (Gaucher and Mohen 1974, 116, Marquise 2), Outreau (*ibid.*, 117, Outreau) and Pontgibaux (Mohen 1972, 461 no. 1418). Ten Armorican socketed axes of Couville type. Mohen 1972, fig. 9, 1-10. Three Armorican socketed axes of Plurien type, 12-14. Four Armorican socketed axes of Tréhou type, 11, 15-17.

BELGIUM

228. Champ de la Ferme Rouge, barrow 3, Court-Saint-Etienne, Brabant.

Mariën 1958, 108-128, figs. 17-19. Inv. Arch. B7.

Burial. One urn, broad mouthed, convex profile with concave neck and slightly everted rim containing a cremation and a small accessory vessel. Mariën 1958, fig. 17, 11. One urn with sub-biconical profile, neck probably upright, combed ornament on the shoulder, horizontal above, wavy below, containing a cremation burial, probably of a young adult male, fig. 17, 15. One iron object, socketed with a shaft twisted alternately left and right, the head, bent at a right angle, originally a trident, fig. 17, 216. One flint pounder, fig. 17, 302. These two objects were found together with a lost fragment of bronze. The following objects were found in a corroded mass: One linear-faceted axe with convex collar and double vertical ribs, fig. 19, 111. One short iron sword, leaf-shaped blade flanked by two double grooves on each side; convex shoulders; round-section tang with a separate antennae-pommel, bifurcated to form four terminals slotted over the tang. On each terminal is a hollow sphere of two parts. Areas of the shoulders, the hilt and the entire pommel are covered with copper sheet, fig. 17, 207. One set of iron horse-harness.

Two cheek-pieces with three rectangular slots and knobbed terminals, the upper terminals bent at right-angles to the plane of the slots. A two-link bit with twisted bars, fig. 18, 211. A similar set, fig. 18, 212. One iron spearhead, leaf-shaped blade of lozenge-section, fig. 18, 209. One single-edged iron sword, fig. 19, 208. Found separately was a third urn with high convex shoulders and slightly conical neck containing the cremation of a second young adult male, fig. 19, 17. One lost fragment of a bronze chape.

Barrow 3 contained the cremated remains of two or three individuals. The relationship between the five deposits is uncertain; Mariën (1958, 127) considers that the third urn was probably primary and associated with the larger group of metal objects, while the smaller, peripheral group of metal objects was secondary. The larger group represents a well-equipped warrior with two swords, a spear and an axe, here interpreted as a weapon, accompanied by two sets of horse-gear which may represent a wagon. If the iron trident were interpreted as a goad, it could be related to the horse-gear. If the two male cremations were contemporary, they could represent a warrior with a slave, though there is sufficient equipment for two warriors each equipped with a horse and a sword.

The linear-faceted axe belongs to the continental Ha C type (see p. The iron spearhead could also be Ha C (cf. Sprater 1939, Abb. 1, 4); it resembles the example in the Llyn Fawr hoard (218). The iron trident can be matched in the hoard from Alsenborn, Kr. Kaiserlauten, Pfalz (*ibid.*, Abb. 1, 7), and these objects may be flesh-hooks (Mariën 1958, 16-17; Schauer 1971, 202 n. 8). There is another iron socket from Court-Saint-Etienne, an isolated find (Mariën 1958, 75 no. 220, fig. 11). The cheek-pieces belong to the Platenice type, Kossock's type Ib (1954a, 156, Karte 2A, 10). Mariën (1958, 120-121) dated the antennae-pommel sword to Ha C2, citing especially the burial from Sesto Calende, Como (Schauer 1971, 202 n. 8); in his summary (1958, 128) Mariën considered and rejected the early Ha D date which he had proposed in *Inv. Arch. B7*. This late date was criticised by Schüle (1960, 19; 1969, 91-92) who suggested an early Ha C date. While other material in this burial could be Ha C1, such an early deposit would surely contain a long sword, and a late Ha C date seems probable in the context of Brabant rather than further south. The single-edged sword appears to be a late Ha C type, though convincing central-European comparisons are rare (Rieth 1942, Abb. 42, 1-2); few single-edged swords are known in the Hunsrück-Eifel area (Haffner 1976, 25). Single-edged Iberian *falcata*, of Mediterranean origin, appeared only in the fifth century (Schüle 1969, 112-114). The iron spearhead could also be of Ha C2 date (see p. 240). Kossack (1970, 115 n. 63) appears to suggest a retarded date for this burial, but still within Ha C.

229. Champ de la Ferme Rouge, barrow 4, Court-Saint-Etienne, Brabant.

Mariën 1958, 128-137, 266, figs. 20-23.

Burial. One urn and one accessory vessel of uncertain identity. One set of intertwined large iron rings each with two pendant smaller rings with a triangular pendant attached. Mariën 1958, figs. 21-23. Two

oval plaques with concave centres and tapering profiles with a rivet at each end, fig. 20, 131. Three circular objects with concave centres and tapering profiles with a large loop, fig. 20, 132. Fragments of a sheet-bronze bowl reconstructed with broad mouth, everted rim, convex profile and omphalos base, fig. 20, 153. One iron fragment. The iron pendants are reminiscent of late Urnfield pendants (see p. 214-5) but can be matched in Ha C contexts (Mariën 1958, 133-134, 266). The oval plaques can be matched at Oss (231).

NETHERLANDS

230. Burial 190, Haps, N. Brabant.

Verwers 1972, 55-62, 162, Abb. 30-32.

Burial, unurned cremation in the centre of an annular ring-ditch. One iron dagger in its sheath. The dagger has a broad blade, straight-sided, presumably tapering to the tip; the upper part of the blade bears trident ornament. The narrow tang was enclosed in a grip of organic material covered with iron sheet. Onto the tang was slotted an antennae-pommel with a two-piece hollow iron oval soldered onto each terminal with copper solder. A decorated iron openwork piece was fitted over the tang onto the shoulders of the dagger and the top of the sheath was modelled to fit into this piece. The sheath was made of two pieces and a chape. The front piece, decorated on its upper part, was bent over and secured to the back piece. On the back piece a vertical section was raised in the centre to form a slot and iron bands were passed through above and below this slot and their ends rolled. The lower end of the sheath was closed by a concave-profile collar and a hollow globular chape. Verwers 1972, Abb. 30-32. Three iron arrowheads with broad leaf-shaped blades and long sockets, Abb. 32. One iron pin with a bent shaft, broken above, Abb. 32.

The pin should be no earlier than Ha D (see p. 258) and the arrowheads should be contemporary. The dagger is probably Ha D2 on comparison with Bavarian examples (see p. 249).

231. Oss, N. Brabant.

Holwerda 1934a; 1934b; Modderman 1964a.

Cremation in a bronze bucket inside a ring-ditch under a large barrow with a peripheral ring-ditch (Holwerda 1934a, afb. 26). The bucket was built of a base sheet and two body sheets riveted together. The base is concave; the body has a concave profile with a high angular shoulder bearing two ribs, the neck is slightly everted and has a rolled rim. Strap-handles were attached to the outside of the body just below the shoulders and to the inside of the neck below the rim. Modderman 1964a, fig. 1. One iron sword, bent almost in a circle. The fragment illustrated by Modderman (*ibid.*, fig. 3, 8) is the tip of this sword (L. P. Louwe-Kooijmans). The blade has an angular midrib flanked by ridges and a ricasso. A cocked-hat pommel of organic material survived with gold-leaf ornament, as did organic

hilt-plates with inlaid gold and bronze ornament, fig. 2, 3. Eight convex bronze buttons with staples, fig. 2, 4. Three massive annular bronze rings, fig. 2, 5. Two oval bronze plates, concave centre and conical profile with small central perforation, fig. 2, 6. One tubular bronze crossing with a central socket, fig. 2, 7. One looped bronze disc with central projection and peripheral flange with perforations, fig. 2, 18. One fragmentary bronze disc with convex centre, fig. 2. The tip of a single-edged iron blade, fig. 3, 9. Three fragments of single-edged iron blades, fig. 3, 10c-e. One unlooped iron socketed axe, fig. 3, 10g. Remains of two sets of iron horse-harness. Both had cheek-pieces with three slots and knobbed terminals, the upper bent at right-angles to the plane of the slots. Staples in the central slots held double-link bits with twisted ornament. One set retained iron rings in the outer loop of the bit, fig. 3, 10i. One bent terminal of an iron cheek-piece, fig. 3, 10j. Two fragments of the lower parts of cheek-pieces, fig. 3, 10k-l. One slot of a cheek-piece, fig. 3, 10n. One terminal of a cheek-piece, fig. 3, 10m. One square-section iron rod, fig. 3, 10f. Twelve annular iron rings, fig. 4. Two pins with two-piece hollow oval heads of sheet bronze on a bent iron shaft, fig. 3, 10a-b. One whetstone, fig. 5, 11. Two fragments of worked bone, fig. 5, 17. Fragments of leather, fig. 5, 16. Fragments of wood, figs. 5, 2; 6. Fragments of textile. A conical looped attachment with peripheral rings is illustrated by Kossack (1954a, Abb. 29C, 1) and a view of a similar object is included in Holwerda's second publication (1934b, 197).

The bronze vessel is a Kurd bucket of Ha C form (von Merhart 1952, 69); though it retains the typologically early high base-plate, it has an angular shoulder. The sword belongs to the iron equivalent of the bronze Mindelheim type (see p. 247), cf. the example with closely similar ornament in the Ha C burial at Gomadingen, Kr. Münsingen, Württemberg (Megaw 1970, 47 no. 11). The pins are probably Ha C1 (see p. 256). The iron socketed axe reflects the presence of axes in barrow 3 at Court-Saint-Etienne (228) and at Wijchen (232), and may also be interpreted as a weapon (see p. 237). All the cheek-pieces appear to belong to the Platenice type, Kossack's type 1b (see p. 254). The oval plates are yoke mounts (Kossack 1954a, 162, Karte 4B, 9), but there appears to be no other evidence for a yoke or a wagon at Oss. The tubular crossing belongs to a widespread class of strap-crossings (Kossack 1954a, 158, Karte 3A, 18; Schüle 1969, 48, 194, Karte 11a); the most recent study of their distribution is by Bouzek (1974a, 158; 1974b, fig. 9) and the finds closest to Oss, from Bavaria, belong to Ha C (Kossack 1959, Taf. 13, 1). The conical looped disc with lateral rings is also a Bavarian Ha C form (Kossack 1954a, 116, 118, 161, Karte 3C, 8). The disc with convex centre may be compared to a disc in a Ha C burial from Illkofen, Ldkr. Parsberg, Oberpfalz (*ibid.*, Abb. 22a, 10).

232. Wezelse Berg, Wijchen, Gelderland.

Den Biesen 1963, 68-71; de Laet 1974, 402, fig. 190; Megaw 1970, 49 no. 16. Casts in RMOL. Fig. 73D.

Cremation burial. Lost urn with bronze and iron fragments. Two bronze double-link bits with twisted bars and bridle-rings (De Laet 1974, fig. 190). Four bronze hub-caps, cylindrical, closed at one end which is decorated with ring-and-dot motifs, open at the other with a broad flange. Each cylinder is perforated by a linch-pin which has a transverse hole in its lower end. The upper parts of the linch-pins have two horizontal bars joined at their ends by two vertical bars to form a rectangle with the shaft at its centre. On the outer side of the upper bar are three vertical rings with sets of pendant rings attached. Above the vertical rings are anthropomorphic heads with zig-zag 'pigtails' running down the backs of the vertical shafts. (De Laet 1974, fig. 190; Megaw 1970, 49 no. 16). Two fragmentary bronze plates formed of cast-bronze cups; loops along one side and a bar along the other, one example has a fragment of sheet bronze attached by a rivet to this bar. Fig. 73D, 3. One socketed bronze terminal with globular end and conical socket (De Laet 1974, fig. 190). One bronze fitting, a truncated cone of concave profile, upper opening circular, lower opening square, the sides convex (*ibid.*). One bronze handle of a vessel with recurved knobbed terminals. Fig. 73D, 1. One pair of bronze handle-attachments, slightly curved plates perforated by two rivet holes, two upstanding rings. Fig. 73D, 2. Two double bronze rings, one inside the other, attached by a bar, a loop on the outer ring. Various other bronze rings and ornaments. One bronze socketed axe, damaged by fire. Various iron fragments, perhaps of a sword, perhaps tyres for wooden wagon-wheels.

The presence of two sets of horse-harness and four hub-caps implies that this burial contained the remains of a four-wheeled wagon drawn by two horses. Kossack includes Wijchen in his list of Ha C wagon burials (1970, 124 n. 96, Abb. 13). The terminal and the conical fitting have been interpreted as fittings for the pole of this wagon (den Biesen 1963, 70; de Laet 1974, 402) but this is difficult to prove. The terminal resembles flesh-hook terminals (see p. 148-9), cf. the probable flesh-hook in barrow 3 at Court-Sainte-Etienne (228). A similar terminal found unstratified at Court-Saint-Etienne (Mariën 1958, 184-185 no. 135b, fig. 10) was probably part of the same object as a terminal with a concave end (*ibid.*, no. 135a) but the function of this object is uncertain. Similar iron objects occur in the Ha D burial at Haidforst, Haslach, Ldkr. Traunstein, Bavaria (Kossack 1959, 228, Taf. 113, 2-5), and are probably items of wagon-gear. Linch-pins with pendant rings are common in Bohemia (Dvořák 1938, obr. 12, 5, 7; 13; 25; 43, 1-2). The anthropomorphic ornament is presumably of central-European origin (Megaw 1970, 49) and relationship with seventh-century Etruscan girdle-clasps was suggested by Jacobsthal (1944, 159 n. 2). The form and ornament of the hub-caps themselves can be matched in the Ha D1 burial at Vilsingen, Kr. Sigmaringen, Swabia (Schiek 1954, 151, Taf. 24), but this form does not appear to have been common (Drack 1958, Abb. 23-29). The handle and its attachments appear to belong to a ribbed pail (Stjernquist 1967, 30, Abb. 2, E5, AH3); pails of this form, otherwise confined to the upper Adriatic coast (*ibid.*, 75-79, Abb. 12), appeared in Ha B3 and lasted to Ha D. The presence of a socketed axe

can be matched at Oss (231) and Court-Saint-Etienne, barrow 3 (228), and an iron sword (den Biesen 1963, 70) would not be out of place, though this identification is uncertain.

233. Meerlo, Limburg.

G. J. Verwers. Bonnefantenmuseum Maastricht.

Cremation burial in an urn with a cover dish. Fragments of a bent iron sword. One complete set of iron horse-harness. Cheek-pieces with knobbed upper terminals and flattened triangular lower terminals with two rectangular perforations. Double-link bit with twisted bar; bridle-hooks with notched flat terminals. Two upper terminals and one lower terminal of similar cheek-pieces. One fragment of a twisted bit with a bridle-ring. One bridle-hook.

The cheek-pieces appear to belong to Kossack's type Ic (1954a, 156, Karte 2B), associated with bridle-hooks at Triglitz, Kr. Ostprignitz, Brandenburg (*ibid.*, 157, Karte 2E, 12, Abb. 20B).

Cross-Channel Relations in the Later Bronze Age

Relations between Britain, North-Eastern France
and the Low Countries during the Later Bronze
Age and the Early Iron Age, with particular
reference to the metalwork

Part ii

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- 15B. Sidlesham hoard, Sussex (37).
- 16A. Rustington hoard, Sussex (36).
- 16B. Highworth hoard, Wilts (38).

- 16C. Helston hoard, Cornwall (41).
- 17A. Dommiers hoard, Aisne (42).
- 17B. Bourneville hoard, Eure (45).
18. Baux-Sainte-Croix hoard, Eure (43).
- 19A. Bourlay hoard, Eure (44).
- 19B. La Chapelle hoard, Eure (46).
20. La Chapelle hoard, Eure
- 21A. Gisors hoard, Eure (47).
- 21B. Heuqueville hoard, Seine-Maritime (60).
22. Heuqueville hoard, Seine-Maritime
- 23A. Livet hoard, Eure (48).
- 23B. Rouen hoard, Seine-Maritime (62).
24. Mont-Saint-Aignan hoard, Seine-Maritime (61).
25. Bernay-Ponthoile hoard, Somme (66).
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 2. Heurteauville, Seine-Maritime, List 3A, 8;
 3. Amiens, Somme, List 3A, 10; 4. Battel, Antwerp, List 3A, 11;
 5. Heusden, E. Flanders, List 3B, 9; 6. Chalton, Hants, see p. 54;
 7. Doddington, Cambs., List 5, 3; 8. Nr Reims, Marne, List 5, 19;
 9. Wetteren, E. Flanders, List 5, 31.
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 5. Schoonaarde, E. Flanders, List 8, 1; 6. Huise, E. Flanders, List 8, 10; 7. Asper, E. Flanders, List 8, 9; 8. Angle Ditch, Dorset, see p. 49
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 6. ? Peterborough area, List 14, 2; 7. Angerville area, Essonne, List 16, 6.
29.
 1. Seine at Paris, List 19, 4; 2. Oise at Ile du Grand Peuple, Arman-court, Oise, List 20, 5; 3. Amiens, Somme, List 20, 11;
 4. Seine at Villeneuve-Saint-Georges, Val-de-Marne, List 20, 12;
 5. Seine at Paris, List 27, 10.
30.
 1. Beaune, Côte-d'Or, see p. 68; 2. Kimberley, Norfolk, List 24, 1.
31.
 1. Knighton Down, Devon, List 42, 2; 2. Noailles, Oise, List 28, 12;
 3. Seine at Paris, List 28, 20; 4. Gottem, E. Flanders, List 28, 31.
32.
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5. Saint-Cyr-du-Vaudreuil, Eure, List 41, 21; 6. South Lodge Camp, Wilts, List 42, 10; 7. Thorny Down, Wilts, List 42, 11;
8. Boves, Somme, List 42, 12; 9. Maiden Castle, Dorset, List 47, 3; 10. Seine at Paris, List 48, 2.
33. Orsett hoard, Essex (105).
34. Dover hoard, Kent (108).
35. Dover hoard, Kent
- 36A. Eriswell hoard, Suffolk (111).
- 36B. Erondelle hoard, Somme (118).
37. 1. Amiens, Somme, List 50, 7; 2. Nijmegen, Gelderland, List 50, 12; 3. Seine at Paris, List 51, 15; 4. Antwerp, List 51, 32; 5. Daknam, E. Flanders, List 51, 34; 6. Flanders, List 51, 25; 7. Cambridge, List 52, 1; 8. Cambridge area, List 52, 2; 9. Quy Fen, Cambs., List 52, 3; 10. Kingoldrum, Forfar, List 52, 24; 11. Nr Annan, Dumfries., List 52, 23; 12. Unprovenanced, Rouen Museum, List 52, 26; 13. Flanders, List 52, 27.
38. 1. Burnham, Suffolk, List 53, 5; 2. Rouen, Seine-Maritime, List 53, 7; 3. ? London, List 55, 2; 4-5. Melle, E. Flanders, List 55, 14-15; 6. Scheldt at Wichelen, E. Flanders, List 55, 16; 7. Eriswell, Suffolk, List 58, 3; 8. Zele, E. Flanders, List 58, 18; 9. Seine at Paris, List 80, 2; 10-11. Scheldt at Schoonaarde, E. Flanders, List 80, 3, 6; 12. Wichelen, E. Flanders, List 80, 7; 13. R. Ebble at Homington, Wilts, List 80, 4; 14. Schoonaarde, E. Flanders, List 81, 11; 15. Seine at Paris, List 83, 2; 16-17. Seine at Paris, List 90, 2-3; 18. Nr Cambridge, List 91, 1; 19-20. Seine at Paris, List 91, 2-3; 21. Thames at Old England, Middlesex, List 93, 1; 22. Thames at Sion Reach, Middlesex, List 93, 2; 23-24. Seine at Paris, List 93, 3-4; 25. Lacroix-Saint-Ouen, Oise, List 94, 2; 26. Seine at Paris, see p. 127.
39. 1. Seine at Villeneuve-Saint-Georges, Val-de-Marne, List 68, 5; 2. Thames at London, List 68, 1; 3. Geraardsbergen, E. Flanders, List 66, 5; 4. Montières, Amiens, Somme, List 64, 6; 5. Methwold, Norfolk, List 76, 2; 6. Dendermonde, E. Flanders, List 76, 6.
40. 1. Rue Fontaine du Roi, Paris, List 70, 7; 2. Rue Fontaine du Roi, Paris, List 72, 3; 3. Trent nr Nottingham, List 76, 3.
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43. Isleham hoard, Cambs.
44. Isleham hoard, Cambs.
45. Isleham hoard, Cambs.

- 46A. Isleham hoard, Cambs.
- 46B. Wicken Fen hoard, Cambs. (128).
- 46C. Wilburton hoard, Cambs. (129).
- 47. Wilburton hoard, Cambs.
- 48. Wilburton hoard, Cambs.
- 49A. Wilburton hoard, Cambs.
- 49B. Andover hoard, Hants (130).
- 49C. Canteleu hoard, Seine-Maritime (139).
- 50. Seine at Paris hoard (138).
- 51. 1. Unprovenanced MAN, List 96, 9; 2. Clairoix, Oise, List 96, 4;
3. Undley, Suffolk, see p. 134. 4. Swaffham, Cambs., List 98, 1;
5. Faubourg de Ham, Amiens, Somme, List 98, 3; 6. Littleport,
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- 52. 1. Thames, ? Mortlake, Surrey, see p. ; 2-5. Seine at Paris,
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- 53. 1-2. Seine at Paris, List 111, 39-40; 3. Albert, Somme, List 111,
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- 54. 1. Aldreth, Cambs., see p. 145; 2. Thames at Teddington, Surrey,
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- 55A. Braes of Gight hoard, Aberdeen. (144).
- 55B. Balmashanner hoard, Angus (145).
- 55C. Dalduff hoard, Ayr. (146).
- 55D. Auchtertyre hoard, Moray. (159).
- 55E. Covesea, Moray. (160).
- 56. Grays Thurrock hoard, Essex (148).
- 57A. Leigh hoard, Essex (150).
- 57B. Shoebury hoard, Essex (151).
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- 58A. Watford hoard, Herts. (153).
- 58B. Aylesford hoard, Kent (154).
- 59. Minnis Bay hoard, Kent (156).
- 60. Minnis Bay hoard, Kent

- 61. Minnis Bay hoard, Kent
- 62A. Stourmouth hoard, Kent (157).
- 62B. Welby hoard, Leics. (158).
- 63A. Déville hoard, Seine-Maritime (173).
- 63B. Pantin hoard, Seine-Saint-Denis (175).
- 64. Dreuil hoard, Somme (177).
- 65A. Dreuil hoard, Somme
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- 66. Plainseau hoard, Somme
- 67A. Plainseau hoard, Somme
- 67B. Saint-Roch hoard, Somme (179).
- 68. 1-2. Amiens, Somme; 3-4. Seine at Paris; see p.162 .
 5. Sint Armandsberg, E. Flanders, List 123, 12; 6. Hilvarenbeek,
 N. Brabant, List 123, 31; 7. Aveley hoard, Essex, *ibid.*;
 8. Ename, E. Flanders, List 124, 2; 9. Hoogstraten, Antwerp, List
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- 69. 1. Beaudreville, Essonne, List 133, 2; 2. ? Thames between
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 Paris, List 137, 2; 4. Amiens, Somme, List 137, 5; 5. Seine at
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 10. Wichelen, E. Flanders, List 144, 11; 11. Levington hoard, Suffolk,
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- 70. 1. R. Witham below Lincoln, List 153, 1; 2. Onnen, Groningen, List
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- 71. 1. Seine at Paris, List 181, 7; 2. Thames at Sion Reach, Middlesex,
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 8. Thames at Old England, Middlesex, List 221, 3;
 9. Thames at Old England, Middlesex, List 224, 1
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- 72C. Paston hoard, Norfolk (220).
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- 73B. Adabrock hoard, Ross. (222).
- 73C. Sompting hoard, Sussex (223).

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3. Hockwold-cum-Wilton, Norfolk, List 227, 14; 4. Little Massingham,
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11. Thames at Sion Reach, Middlesex, List 229, 1.
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10. Nr. Antrim, Co. Antrim, List 252, 5; 11. Amiens, Somme, List
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MAPS

Encircled symbols represent hoards.

Cruciform symbols represent finds with a regional provenance.

Hatching represents the area of common occurrence of a type.

1. Arreton flanged axes. LIST 1. Britain after Burgess and Cowen 1972, fig. 6, 2.
2. Haft-flanged axes. LIST 2. England after Rowlands 1976, map 1, class 1; Wales after Smith 1959, map 4a.
3. Shield pattern palstaves. LISTS 3A-B. England after Rowlands 1976, map 2.
4. Breton palstaves. LIST 5.
5. Norman palstaves. LISTS 7A-B.
6. Broad-bladed palstaves. LISTS 4, 8.
7. Lower Meuse palstaves. LIST 9. Netherlands after Butler 1973b, Abb. 6.
8. Isle of Wight palstaves. LIST 12. England after Rowlands 1976, map 6.
9. Nordic palstaves. LIST 10. Bohemian palstaves. LIST 11. Centre-ouest palstaves. LIST 6.
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11. Tréboul spearheads. LIST 18.
12. Side-looped spearheads. LIST 19. England after Rowlands 1976, map 15.
13. Leaf-shaped basal-looped spearheads. LIST 20. England after Rowlands 1976, list for his group 1, map 16 for his group 2.
14. Ogival-bladed spearheads. LIST 21. Bagterp, Valsømagle, Smørumovre, Hulterstad, Lüneburg type II, north-west German and central European spearheads. LIST 22.
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26. Early Urnfield knives. LIST 55.
27. Straight-based basal-looped spearheads. LIST 57. England after Rowlands 1976, map 17.
28. Tanged arrowheads. LIST 58. Socketed arrowheads. LIST 59.
29. Early flange-hilted swords. Sprockhoff type I. LIST 60. Nenzingen. LIST 61. Buchloe/Greffern. LIST 62. Stätzling. LIST 63.
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31. Later flange-hilted swords. Hemigkofen, Uffhofen and Elsenfeld. LIST 70. Erbenheim. LIST 71. Letten. LIST 72.
32. Rosnoën swords. LIST 73. Britain after Burgess 1968a, fig. 7, and Rowlands 1976, list.
33. Ballintober and related swords. LIST 75. Britain after Burgess 1968a, fig. 7.
34. Earlier LBA 1 pins. Poppy-head and derivative. LIST 80. Trumpet head with ribbed swollen shaft. LIST 81. Collared. LIST 82. Globular incised head. LIST 83. Guntersblum. LIST 84. Incised shaft. LIST 85.
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36. LBA 1 hoards. Catalogue. Britain partly after Burgess 1974, 205-207.
37. LBA 2 palstaves. LIST 96. Britain after Savory 1964-66, fig. 9.
38. LBA 2 winged axes. LIST 97.
39. LBA 2 socketed axes. Shouldered. LIST 98. Indented. LIST 99. Plain. See page 136. British indented axes after Burgess 1968a, fig. 8.

40. LBA 2 spearheads. Solid-bladed continental. LIST 103. Decorated continental. LIST 104. Saxo-Thuringian and related. LIST 105. Perforated-bladed continental. LIST 106. Lozenge-section British after Burgess 1968a, fig. 8.
41. Tubular ferrules. LIST 107. Britain after Burgess 1968a, fig. 8.
42. Locras swords. LIST 108. Mainz swords. LIST 109. Klentnice swords. LIST 110.
43. LBA 2 swords. LIST 111. Britain after Burgess 1968a, fig. 10.
44. Lozenge-section chapes. LIST 112. Britain after Burgess 1968a, fig. 8.
45. LBA 2 pins. Disc-head. LIST 115. Egg-shaped head. LIST 116.
46. LBA 2 hoards. Catalogue. Britain after Burgess 1968a, fig. 8.
47. Winged adzes. LIST 121. South-eastern socketed axes with plastic wing ornament. LIST 122.
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51. Tanged leather-working knives. LIST 131.
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54. Carp's Tongue knives. LIST 139.
55. Late Urnfield knives. Tanged. LIST 140. Socketed. LIST 141. Solid-hilted. LIST 142.
56. Late Urnfield solid-hilted swords. Stockstadt. LIST 148. Mörigen. LIST 149. Auvernier. LIST 150. Tachlovice. LIST 151. Weltenburg. LIST 152. Antennae-pommel. LIST 153.
57. Late Urnfield flange-hilted swords. Klein Auheim. LIST 155. Port Nidau. LIST 156. Miscellaneous. LIST 157.
58. Carp's Tongue swords. LIST 158.
59. Ewart Park swords. LIST 159. Britain after Burgess 1968a, fig. 12.
60. Small bag-shaped chapes. LIST 161.
61. Bugle-shaped objects. LIST 166.
62. Antler cheek-pieces. LIST 172. England after Britnell 1976.

63. Roll-headed pins. LIST 179. Nail-headed pins. LIST 180.
64. Vase-headed pins. LIST 181. Cup-headed pins. LIST 182. Convex-headed pins. LIST 184.
65. Biconical-headed pins. LIST 185. Pins with hollow globular heads. LIST 186. Pins with inset disc-heads. LIST 187.
66. Homburg/Balingen bracelets. LISTS 191-2. Ribbed/transverse line bracelets. LISTS 193-4.
67. Wallerfangen bracelets. LIST 195. Decorated C-section bracelets. LIST 196. Massive C-section bracelets with everted terminals. LIST 197. Odoorn bracelets. LIST 198. Omega bracelets. Butler 1965, fig. 15.
68. Lyzel bracelets. LIST 199. C-section bracelets with large everted terminals. LIST 200. Hollow-section bracelets with large everted terminals. LIST 201.
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70. Lyzel pendants. LIST 209. Urnfield pendants. LIST 210.
71. Penannular gilded rings. LIST 211. Penannular gold rings. LIST 212.
72. Beads. LIST 213.
73. Lozenge-shaped mounts. LIST 217. Toothed plates. LIST 218. Plain slides. LIST 219.
74. LBA 3 razors. Multiple-ring handle. LIST 221. Dutch bifid. LIST 222. Single-edged Urnfield. LIST 224. Single-edged Nordic. LIST 225.
75. LBA 3 hoards. Catalogue. Britain after Burgess 1968a, figs. 12, 14; Burgess and Miket 1976, fig. 2; Savory 1975, fig. 2; Burgess, Coombs and Davies 1972, fig. 1c. North-eastern France partly after Blanchet 1976a, fig. 38.
76. Linear-faceted axes. LIST 227. England partly after Moore and Rowlands 1972, fig. 2.
77. Armorican socketed axes in British hoards. LIST 228.
78. Baexem axes. LIST 229. Netherlands after S. H. Achterop.
79. Hallstatt iron swords. LIST 234.
80. Hallstatt buckets. LIST 240. Ribbed pails. LIST 241.
81. Wiesloch razors. LIST 263. Eendingen razors. LIST 264. Flörsheim razors. LIST 265. Bernissart razors. LIST 266.
82. Triangular-bladed razors. LIST 267. Circular-bladed razors. LIST 268. Iron razors. LIST 269.

LIST 1. Arreton flanged axes. MAP 1.

North-eastern France

1. Foret de Bords hoard, Eure (50).
2. Muids hoard, Eure (51).
Three examples.
3. Cambrai area hoard, Nord (53).
4. Bailleul-sur-Thérain hoard, Oise (54).
Seven examples.
5. Boulogne area, Pas-de-Calais.
Mohen 1972, fig. 1, 3; Gaucher and Mohen 1974, 111,
Boulogne-sur-Mer environs 1.
6. Somme at Abbeville, Somme.
Breuil 1905, fig. 2, 11; Gaucher and Mohen 1974, Abbeville 11, ill.
11, d.
7. Amiens, Somme.
Breuil 1905, fig. 1. 10; Gaucher and Mohen 1974, 106, Amiens 3.
8. Drucat, Somme.
Breuil 1905, fig. 1, 5; Gaucher and Mohen 1974, 113, Drucat 1-2,
ill. 11, c.
Two examples.
9. Flaucourt, Somme.
Gendre 1977.

Belgium

10. Brussegem, Brabant.
Desittere 1973c, 68, fig. 3.
11. Aalter Houtem, E. Flanders.
Ibid., 69, fig. 4.
12. Lochristi, E. Flanders.
Ibid., 66-67, fig. 1.
13. Melle, E. Flanders.
Ibid., 67-68, fig. 2.
Possible examples, not mapped:
14. Waasmunster, E. Flanders.
Ibid., 69.

15. Bruges area, W. Flanders.
Ibid., 69.

LIST 2. Haft-flanged axes. MAP 2.

North-eastern France

1. Muids hoard, Eure (51).
Without stop-ridge.
2. Boulogne area, Pas-de-Calais.
Mohen 1972, 447, fig. 1, 4; Gaucher and Mohen 1974, 111,
Boulogne-sur-Mer environs 2.
with stop-ridge.
3. Berny-sur-Noye, Somme.
Breuil 1905, fig. 2, 12; Gaucher and Mohen 1974, 110, Berny-sur-
Noye.
With stop-ridge.
4. Bray-sur-Somme, Somme.
Breuil 1905, fig. 2, 14; Gaucher and Mohen 1974, 111,
Bray-sur-Somme.
With stop-ridge and shield-pattern.

Netherlands

5. Rijsbergen, N. Brabant.
Butler 1963a, 48, fig. 9, pl. VII, 3.
Without stop-ridge.

LIST 3A. Shield-pattern palstaves: non-British. MAP 3.

North-eastern France

1. Giverny, Eure.
Coutil 1921, pl. 2, 27.
2. Fôret de Bords hoard, Eure (50).
3. Muids hoard, Eure (51).
4. Faubourg de Bresles, Beauvais, Oise.
Ash 1927, 2028
Fig. 26, 1.
5. Choisy-au-Bac, Oise.
Blanchet and Lambot 1975, 32, fig. 8.
6. Dieppe, Seine-Maritime.
Sprockhoff 1941, Abb. 37, 10.
Indistinct stop-ridge.
7. Rosendal, Dieppe, Seine-Maritime.
Verron 1971, 52 no. 14b; Briard and Verron 1976a, 84, fig. 2.
Indistinct stop-ridge.

8. Heurteauville, Seine-Maritime.
Musée Departmental des Antiquites de la Seine-Maritime, Rouen.
Verron 1971, 52, no. 14c.
Indistinct stop-ridge.
Fig. 26, 2.
9. Montivilliers, Seine-Maritime.
Coutil 1921, pl. 2, 24; Verron 1971, 52, no. 14a.
10. Amiens, Somme.
Ash 1927. 2139.
Gaucher and Mohen 1974, 106, Amiens 5.
Fig. 26, 3.

Belgium

11. Battel, Antwerp.
Museum Vleeshuis, Antwerp, 2308.
Indistinct stop-ridge.
Fig. 26, 4.

Netherlands

12. Vlodrop, Limburg.
Bloemers 1973, 21, afb. 4, 8.
Indistinct stop-ridge.

LIST 3B. Shield-pattern palstaves: British or related. MAP 3.

North-eastern France

1. Hennezis, Eure.
Coutil 1921, pl. 1, 30.
2. Le Landin, Eure.
Ibid., pl. 1, 29.
3. Cambrai area hoard, Nord (53).
4. Mont Cesar, Oise.
There are many sites of this name in the Compiègne area.
Blanchet and Lambot 1975, 31-32, fig. 7.
5. Seine at Pont-Saint-Michel, Paris.
Mohen 1968, 779-781, B9, pls. I:VIII.
Incomplete shield, long midrib.
6. Seine between La Bouille and Duclair, Seine-Maritime.
Bonifay 1967, 330, fig. 21.
Rib in shield.
7. Rouen, Seine-Maritime.
Verron 1971, 52 no. 14d.
8. Montières, Amiens, Somme.
Breuil 1905, fig. 3, 19; Gaucher and Mohen 1974, 106, Amiens 20.

Belgium

9. Heusden, E. Flanders.
University Museum, Ghent, 322.
Desittere 1976, 90, fig. 4, 6.
Fig. 26, 5.

Netherlands

10. Voorhout hoard, S. Holland (85).
Fourteen examples.

LIST 4. Broad-bladed palstaves, Somme-Oise-Aisne group. MAP 6.

Side-flanged with midrib

1. Chatillon-les-Boulogne, Pas-de-Calais.
Mohen 1972, 447-449, fig. 2, 8; Gaucher and Mothen 1974, 111,
Boulogne 10, ill. 19, f.
2. Amiens Museum hoard, Somme (65).
3. Bernay-Ponthoile hoard, Somme (66).
Three examples.
4. Lille, Nord.
Ash 1927. 2141.
Gaucher and Mothen 1974, 116, Lille 10.
Fig. 27, 2.
5. Bernay-Ponthoile hoard, Somme (66).
Four examples.
6. Hardecourt-aux-Bois, Somme.
Gaucher and Mothen 1974, 114 Hardecourt-aux-Bois, ill. 19, b.

Small shield-pattern with pendant rib

7. Forest of Compiègne, Oise.
Blanchet and Lambot 1975, 30 no. 3.
8. Bernay-Ponthoile hoard, Somme (66).
Three examples.

Small shield-pattern or inset containing ribs

9. Dommiers hoard, Aisne (42).
Three examples.
10. Valenciennes, Nord.
Mohen 1972, 447, fig. 2, 5; Gaucher and Mothen 1974, 119,
Valenciennes, ill 19, d.
11. Saint Nicolas, Forest of Compiègne, Oise.
Blanchet and Lambot 1975, 31 no. 4.

Double pendant curve

12. Amiens Museum hoard, Somme (65).

13. Amiens, Somme.

CMAE FB 55.

Fig. 27, 3.

Cordiform inset

14. Dommiers hoard, Aisne (42).

15. Hesdin area, Pas-de-Calais.

Gaucher and Mohen 1974, 115, Hesdin environs ill, 19, a.

16. Abbeville, Somme.

Breuil 1905, fig. 3, 25; Gaucher and Mohen 1974, 103, Abbeville 1.

17. Amiens Museum hoard, Somme (65).

18. Bernay-Ponthoile hoard, Somme (66).

19. Ham, Somme.

Breuil 1905, fig. 3, 23; Gaucher and Mohen 1974, 114, Ham.

Double inset

20. Morienval, Oise.

Blanchet and Lambot 1975, 31 no. 5.

21. Bernay-Ponthoile hoard, Somme (66).

22. Nouvion, Somme.

Breuil 1905, fig. 3, 31; Gaucher and Mohen 1974, 117, Nouvion.

V-ornament

23. Dommiers hoard, Aisne (42).

24. Beauvais Museum, Oise.

Blanchet and Lambot 1975, 51 no. 43.

Trident or psi-ornament

25. Boulogne area, Pas-de-Calais.

Mohen 1972, 447, fig. 2, 7; Gaucher and Mohen 1974, 111,
Boulogne environs 3, ill. 19, e.

26. Amiens Museum hoard, Somme (65).

27. Bernay-Ponthoile hoard, Somme (66).

Three examples.

Five-pronged trident ornament

28. Mont Javroux, Oise.

Blanchet and Lambot 1975, 50-51 no. 42.

29. Bernay-Ponthoile hoard, Somme (66).

LIST 5. Breton palstaves. MAP 4.

Britain

1. Beenham, Berks.
Burgess 1969a, fig. 1, c; Rowlands 1976, 290 no. 306, pl. 32.
looped.
2. Wantage hoard, Berks. (1).
Two examples.
3. Doddington, Cambs.
CMAE 1919.4.358.
Rowlands 1976, 296 no. 391, pl. 32.
Looped.
Fig. 26, 7.
4. ? Cardiganshire.
Burgess 1969a, fig. 1, d.
Looped.
5. Wareham, Dorset.
Rowlands 1976, 303 no. 493, pl. 32.
6. Grays hoard, Essex (9).
7. Compton Down, near Winchester, Hants.
Rowlands 1976, 307 no. 541, pl. 32; Moore 1976, 112, fig. 3, 1.
8. Gosport hoard, Hants (11).
9. Purewell, Christchurch, Hants.
Rowlands 1976, 307 no. 549; Moore 1976, 112, fig. 3, 2.
10. Kent.
CMAE 24.1299.
Rowlands 1976, 313 no. 627.
11. Near Mildenhall, Suffolk.
Ibid., 336 no. 953, pl. 32.
Looped.
12. Sutton, Suffolk.
Ibid., 337 no. 968, pl. 32.
Looped.
13. Lodge Farm, Newhaven, Sussex.
Ibid., 341 no. 1012, pl. 32.
14. Sidlesham hoard, Sussex (37).
Three examples.
15. Near Bewdley, Worcs.
Burgess 1969a, fig. 1a.

North-eastern France

16. Brionne, Eure.
Briard and Verron 1976a, 104.

17. Fourmetot, Eure,
Burgess 1969a, 151 n. 13.
18. Ville-d'Avray hoard, Hauts-de-Seine (52).
Seven examples.
19. Near Reims, Marne.
Ash 1927.2143.
Fig. 26, 8.
20. Desvres hoard, Pas-de-Calais (56).
21. Heuqueville hoard, Seine-Maritime (60).
22. Roumare Forest hoard, Seine-Maritime (58).
23. Verneuil-l'Etang hoard, Seine-et-Marne (64).
24. Amiens, Somme.
Gaucher and Mohen 1974, 36, 106, Amiens 4, ill. 18.
25. Bernay-Ponthoile hoard, Somme (66).
26. Bertangles, Somme.
Ibid., 110, Bertangles 1.
27. Somme.
Ibid., 120, Somme 17.

Belgium

28. Baasrode, E. Flanders.
Museum Vleeshuis, Antwerp 2305.
Looped.
29. Ghent area, E. Flanders.
Desittere 1974b, 149 no. 19, fig. 4; 1976, 90, fig. 4, 12.
30. Oudenaarde, E. Flanders.
Desittere 1976, 90; Desittere and Weissenborn 1977, 22 no. 7,
fig. 4.
Looped.
31. Wetteren, E. Flanders.
Museum Vleeshuis, Antwerp 2261 2/5.
Fig. 26, 9.
32. Tournai, Hainaut.
Museum Vleeshuis, Antwerp 2304.
Desittere 1976, 90.
33. Prov. Luxembourg.
Musée Curtius, Liège.

Netherlands

34. Nijmegen area, Gelderland.
Rijksmuseum G. M. Kam, Nijmegen.

LIST 6. Centre-ouest palstaves. MAP 9.

Britain

1. Gable Head hoard, Hants (12).

North-eastern France

2. Forest of Compiègne , Oise.
Blanchet and Lambot 1975, 30 no. 1.

LIST 7A. Unlooped Norman palstaves. MAP 5.

Britain: hoards only

1. Dewlish hoard, Dorset (6).
Two examples, cf. Bourneville (45)2, Chambourcy (71)2, Mont-Saint-Aignan (61)6.
2. Gable Head hoard, Hants (12).
Four examples, cf. La Chapelle (46)7, 17, Heuqueville (60)12, Sucy-en-Brie (68)g.
3. Pear Tree Green hoard, Hants (15).
Four examples, cf. Bourlay (44)7, Gisors (47)5, 7, Heuqueville (60)7, 10, Mont-Saint-Aignan (61)6.
4. Leavington hoard, Isle of Wight (20).
One possible example, corroded.
5. Marshall Estate hoard, Sussex (32).
Four examples, cf. Bourlay (44)1, 2, Livet (48)7, Heuqueville (60)7, Verneuil (64)10, Sucy-en-Brie (68)c.
6. Blackrock hoard, Sussex (34).
Three examples, cf. Bourlay (44)2, Bourneville (45)3, La Chapelle (46)13, Heuqueville (60)17.

Belgium

7. Waasmunster, E. Flanders.
University Museum, Ghent 318.
De Laet 1974, 300, fig. 140; Desittere 1976, 90, fig. 4, 8.
Fig. 27, 1.
Cf. La Chapelle (46)10, Mont-Saint-Aignan (61)5.

LIST 7B. Looped Norman palstaves. MAP 5.

Britain: hoards only

1. Wantage hoard, Berks (1).
Cf. La Chapelle (46)1.
2. Grunty Fen hoard, Cambs (103).
Two examples, cf. La Chapelle (46)4, Aubergenville (69)2.
3. Credition hoard, Devon (5).
Cf. La Chapelle (46)2.

4. Dewlish hoard, Dorset (6).
Two examples, cf. La Chapelle (46)2, La Queue-les-Yvelines (72)1.
5. Grimstone hoard, Dorset (8).
6. Gosport hoard, Hants (11).
Cf. La Chapelle (46)5, Heuqueville (60)2, Rouen (62)3, Aubergenville (69)2.
7. Gable Head hoard, Hants (12).
Eight examples, cf. La Chapelle (46)1, 3, 5, Heuqueville (60)2, Rouen (62)3, 5, Verneuil (64)15, Aubergenville (69)2.
8. Pear Tree Green hoard, Hants (15).
Six examples, cf. La Chapelle (46)3, 5, Heuqueville (60)1, 2, Rouen (62)3, 5, Verneuil (64)13, 15, Aubergenville (69)2.
9. Swanwick hoard, Hants (16).
10. Leavington House hoard, Isle of Wight (20).
Cf. Livet (48)1.
11. Marshall Estate hoard, Sussex (32).
Two examples, cf. La Chapelle (46)3, Heuqueville (60)1, Rouen (62)5, Verneuil (64)13, 15.

LIST 8. Broad-bladed palstaves in Belgium and the Netherlands. MAP 6.

Plain

1. Schoonaarde, E. Flanders.
Museum Vleeshuis, Antwerp 2306.
Fig. 27, 5.
2. Serskamp, E. Flanders.
Desittere 1976, 89, fig. 4, 9.
Cf. Gosport (11)7, Near Canterbury (24)6, Birchington (23)12-13.

Trident ornament

3. Beirvald (? Beervelde, E. Flanders).
Museum Vleeshuis, Antwerp 2307.
Fig. 27, 4.
4. Schoonaarde, E. Flanders.
Desittere 1976, 90, fig. 4, 10.
Additional ribs in trident.
Cf. List 4, 25-29.

Midrib

5. Scheldt at Antwerp.
Museum Vleeshuis 2301.

Midrib with short ribs

6. Epe hoard, Gelderland (83).

Inset with midrib

7. ?Nijmegen area, Gelderland.
Butler 1963a, 72 no. 36, pl. VII, 5.
Cf. Dommiers (42)3-5, La Chapelle (46)13; Heuqueville (60)17.
Possibly Norman.

Inset containing ribs

8. Norg. Drenthe.
Ibid., no. 26, pl. VII, 4.
Cf. List 4, 9-11.

Cordiform inset

9. Asper, E. Flanders.
Museum Vleeshuis, Antwerp 2302.
Fig. 27, 7.
10. Huise, E. Flanders.
University Museum, Ghent 248.
Desittere 1976, 90, fig. 4, 7.
Fig. 27, 6.
11. Between Wijchen and Nijmegen, Gelderland.
Butler 1963a, 72 no. 35, pl. VII, 6.
12. Stevensweert, Dutch Limburg.
Bloemers 1973, 48, afb. 4, 7.
Cf. Burnham (2) 14-16, Birchington (23) 6-11, Near Canterbury
(24) 2-3, Goudhurst (25)1, Marshall Estate (32) 14.

LIST 9. Lower Meuse palstaves in Belgium. MAP 7.

1. Oud-Turnhout, Antwerp.
Mariën 1952, afb. 181, 2.
Looped.
2. Tongerlo, Antwerp.
MRAH Brussels.
De Loë 1931a, 29.
Cast.
3. Ghent area, E. Flanders.
MRAH Brussels.
Ibid., 29-30, 32.
Three examples.
4. Wetteren, E. Flanders.
Museum Vleeshuis, Antwerp 2261 3/5.
Fig. 28, 1.
Looped.
5. Angleur, Liège.
Mariën 1952, afb. 181, 3; Dawans 1972, 313 no. 5.

6. Flemalle-Haute, Liège.
Dawans 1972, 313 no. 3, pl. V, centre.
Small.
7. Juslenville, Liège.
Ibid., 314 no. 6, pl. VI, centre.
Large.
8. Vottem, Liège.
Ibid., 315 no. 9, pl. VI, left.
Looped.
9. Maaseick, Limburg.
Ash 1927. 1984.
Fig. 28, 2.
Ribbed.
10. Molenbeersel, Limburg.
MRAH Brussels.
De Loë 1931a, 35.
11. Prov. Namur.
MRAH Brussels.
Ibid., 31.

LIST 10. Nordic palstaves. MAP 9.

Britain

1. Wellington, Somerset.
Butler 1963a, 70; Rowlands 1976, 333 no. 903.
Provenance uncertain. Faceted sides.
2. Mitcham, Surrey.
S. Needham.
Narrow stop-ridge, narrow blade with side-flanges and midrib, arched mouldings on sides.
3. Driffield, Yorks.
Anon. 1923; Butler 1963a, 70.
Straight stop-ridge, narrow blade with side-flanges and broad, tapering midrib, arched mouldings on sides.

Netherlands

4. Emmercompascuum, Drenche.
Butler 1963a, to, pl. VII, 1.
Curved stop-ridge, Y-ornament on blade.
5. Nieuwe Weerdinge, Drenthe.
Ibid.
6. Epe, Gelderland.
Modderman 1960-61.
From a barrow with a cremation burial.
Straight stop-ridge, narrow blade with two ribs inside side-flanges;

deep moulding below the stop-ridge, two collars on the septum; bands of ornament on the sides above and below the moulding.

7. Den Burg, Texel, N. Holland (84).

LIST 11. Bohemian palstaves. MAP 9.

Britain

1. ? Wallingford area, Berks.
Rowlands 1976, 292 no. 326, pl. 33.
2. Horridge Common, Ilsington, Devon.
Ibid., 276 no. 168, pl. 33; Fox and Britton 1969.

LIST 12. Palstaves similar in form to the Isle of Wight type. MAP 8.

North-eastern France

1. Blerancourt, Aisne.
Mathieu 1977, fig. 1.
2. Beaumont-sur-Oise, Val-d'Oise.
Ibid., fig. 2.

LIST 13. Double-looped palstaves.

Britain

1. Penvores, Cornwall.
Evans 1881, 95-96, fig. 86; Rowlands 1976, 300 no. 456, pl. 33.
Broad conical rib.
2. Truro, Cornwall.
Gray 1937, 66; Rowlands 1976, 300 no. 450.
3. Chagford, Devon.
Fox 1955, 320, pl. 14, c; Rowlands 1976, 301 no. 463, pl. 33.
Broad conical rib.
4. Weymouth, Dorset.
Rowlands 1976, 303 no. 496, pl. 33.
Midrib.
5. Bournemouth, Hants.
Crawford 1911-12, 44, 48; Rowlands 1976, 306 no. 540.
6. Garsington, Oxon.
Crawford 1911-12, 48; Rowlands 1976, 327 no. 833.
7. Rotherfield, Oxon.
Rowlands 1976, 291 no. 316, pl. 33.
Midrib.
8. Cheddar, Somerset.
Gray 1937, 64, fig. 2; Rowlands 1976, 331 no. 872, pl. 33.
Broad midrib.

9. Curland, Somerset.
Gray 1937, 63, fig. 1; Rowlands 1976, 331 no. 875, pl. 33.
Broad conical rib.
10. South Petherton, Somerset.
Gray 1905, 141-142, fig. 2; Rowlands 1976, 332 no. 894, pl. 33.
Broad midrib.
11. West Buckland hoard, Somerset (30).
Broad V-groove.
12. Somerset.
Rowlands 1976, 332 no. 892, pl. 33.
Broad conical rib.
13. 'Central Wales'.
Savory 1966-68; Eogan 1967. 154, pl. 20.
Broad conical rib. Possibly associated with a gold bar torc.

Ireland

14. Ballincollig, Co. Cork.
Ash 1927, 2795.
Fig. 28, 4.
Broad conical midrib.
15. Ireland.
Talbot de Malahide 1852.
Broad midrib.

Belgium

16. Deinze, E. Flanders.
Childe 1939, 321, fig. 2.
Narrow, two vertical grooves below stop-ridge, large loops.

LIST 14. Socketed axes. MAP 10.

England

1. Barrington, Cambs.
CMAE 24238.
Butler 1963a, 79 no. 4; Rowlands 1976, 347 no. 1075, pl. 34.
Fig. 28, 5.
Ribbed collar, V-ornament.
2. ? Peterborough area, Hunts.
City Museum, Peterborough, L. 662.
Rowlands 1976, 347 no. 1082, pl. 34; Green 1977, 16 no. 64, fig. 29.
Fig. 28. 6.
Ribbed collar.
3. Leopold Street hoard, Oxford.
Inv. Arch. GB5, 11.
Ribbed collar.

4. Norton Fitzwarren hoard, Somerset (29).
5. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 17.
6. Highworth hoard, Wilts (38).
Unlooped.
7. Steeple Langford hoard, Wilts (40).

Ireland

8. Bishopsland hoard, Co. Kildare.
Eogan 1964, 273, 340 no. 40, fig. 5, 2.
Ribbed collar.

Netherlands

9. Holterberg, Overijssel.
Butler 1963a, 77, 80 no. 34, fig. 20.
Ribbed collar.

LIST 15. Socketed hammers.

England

1. Burgess's Meadow hoard, Oxford.
Inv. Arch. GB6, 6.
2. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 15.
Ribbed collar, V-rib.

Scotland

3. Insoch Wood hoard, Nairn.
Coles 1963-64, 117, 154, fig. 18, 13.

Ireland

4. Bishopsland hoard, Co. Kildare.
Eogan 1964, 274, 340 no. 40, fig. 5, 35.
Three examples, two with ribbed collars.

LIST 16. Anvils.

England

1. Flax Bourton, Somerset.
Rowlands 1976, 46, 256 no. 112, 1; Jones 1931; Organ 1953-56;
ApSimon 1969-71, 45-46.
Wedge-shaped body with two conical projections on one side.
A modern fabrication found with a copy of a Middle Bronze Age palstave.
2. St. Leonards Marina, Sussex.
Rowlands 1976, 46, 269 no. 7, pl. 3.
Wedge-shaped tenon with flat upper face and pointed projection.
Possibly part of a Middle Bronze Age hoard (ibid., no. 149).

Scotland

3. Insoch Wood hoard, Nairn.
Coles 1963-64, 118, 154, fig. 18, 12.
Square body with two tenons, one conical, the other wedge-shaped with grooved sides.

Ireland

4. Bishopsland hoard, Co. Kildare.
Eogan 1964, 276, 340 no. 40, fig. 5, 11.
Two projecting faces, two tenons.

France

5. Champ Tortu, Cuiry-les-Chaudardes, Aisne.
Letterle 1976, 175-176, pl. 42.
Fragments of one valve of a stone mould.
Associated with pottery of probable Bronze Moyen date.
6. Angerville area, Essonne.
Nicolardot and Gaucher 1975, 31, fig. 2.
Square body with two tenons, one conical, the other wedge-shaped.
This anvil is illustrated after a drawing by Verron and is said to be in the 'Musée d'Oxford'; this is presumably the example with the provenance 'Seine at Paris' Ash 1927.2251, here illustrated as Fig. 28, 7.
Nicolardot and Gaucher claim (ibid., 32) that the anvil was accompanied by a socketed hammer with a square mouth. This could be a reference to the hammer from Beaudreville (List 133, 2) but I can find no record of such an association.

LIST 17. Knobbed sickles.

England

1. Edington Burtle hoard, Somerset.
Inv. Arch. GB44, 15-18.
Three examples with double knobs and single ribs, one with elongated knob, double rib and V-ornament.
2. Monkswood hoard, Somerset.
Inv. Arch. GB42, 24-26.
Three examples with elongated knobs, one having double and the others single ribs.
3. Sparkford hoard, Somerset.
Inv. Arch. GB46, 1-2.
Two examples with double knobs, one without ribs and the other with single rib and V-ornament.
4. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 21-22.
One example with single knob and single rib, one example with double knob and single rib.

Ireland

5. Bishopsland hoard, Co. Kildare.
Eogan 1964, 276, 340 no. 40, fig. 5, 16.
Elongated knob, single rib.

Netherlands

6. Epe hoard, Gelderland (83).
Double knob, triple rib.
7. Veenenburg hoard, S. Holland (125).
Two fragments with single knobs and double ribs.
8. Holset, Limburg.
Inv. Arch. NL15.
Two examples, double knobs.

LIST 18. Treboul spearheads. MAP 11.

North-eastern France

1. Aubigny-au-Bac, Nord.
Mohen 1972, 463, fig. 10, 7; Gaucher and Mothen 1974, 109.
Aubigny-au-Bac 2.
2. Lillebonne, Seine-Maritime.
Briard 1965, 104; Verron 1971, 51 no. 11.

Belgium

3. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 33 no. 44, fig. 18.
4. Butler marks another example near Tongeren, Limburg.
Butler and Safatij 1970-71, fig. 1.

Netherlands

5. Meuse between Cuyk and Katwijk, N. Brabant.
Desittere 1976, 89.
6. Nieuwe Weerdinge, Drenthe.
Desittere and Weissenborn 1977, 29 n. 4.
7. Witharen, Overijssel.
Ibid.
- 8-9. Meuse at Kessel, Limburg.
Briard 1965, 106; Desittere 1976, 89.
Butler has a find-spot just south of Kessel, near Roermond,
and another just south-west of Roermond.
Butler and Sarfatij 1970-71, fig. 1.

LIST 19. Side-looped spearheads. MAP 12.

Numbers prefaced by B and JF refer to the lists of Briard (1963) and Jacob-Friesen (1967).

North-eastern France

1. Bruyeres-sur-Fere, Aisne.
Blanchet 1973, 49; B 28; JF 1663.
2. Armancourt, Oise.
Blanchet 1976a, 34, fig. 34, 10.
Rowlands Group 1.
3. Confluence of the Oise and the Aisne at Compiègne, Oise.
Blanchet 1973, 47-48, fig. 3.
Rowlands Group 1.
4. Seine at Paris.
Ash 1927.2217.
Blanchet 1973, 49; B 40; JF 1684.
Fig. 29, 1.
Rowlands Group 1.
5. Paris area.
Blanchet 1973, 49; Mohen 1968, 795.
Four examples in MAN.
6. Amiens, Somme.
Blanchet 1973 49; Gaucher and Mohen 1974, 107, Amiens 38,
ill. 28, a; B 40: JF 1653.
Rowlands Group 1.
7. Seine between Andresy and Poissy, Yvelines.
Blanchet 1973, 49; de Mortillet 1903, pl. XXXVII, 1101; B 12;
JF 1673.
Rowlands Group 1.

The following examples, not included by Blanchet (1973), are not mapped here:

Jaux, Oise.

B 37; JF 1660.

Possibly confused with the basal-looped spearhead from the Oise above
Jaux (List 20, 6).

Saint-Just-en-Chausée, Oise.

B 38; JF 1661.

Seine at Paris.

B 13; JF 1677.

This is probably the same example in the Evans Collection as B 40
(List 19, 4).

Belgium

8. Scheldt at Hamme, E. Flanders.
JF 1715; de Laet 1974, 302.
Not included by Desittere (1976, 89).

Netherlands

9. 's-Hertogenbosch, N. Brabant.
Butler 1961a; JF 1738.

Loops removed and replaced by peg-holes.

Rowlands Group 1.

10. Papenvoort, Rolde, Drenthe.
Butler 1963a, 102-103, 109 no. 12, JF 1722.
Rowlands Group 1.

LIST 20. Basal-looped spearheads with leaf-shaped blades. MAP 13.

Numbers prefaced by B and JF refer to the lists of Briard (1963) and Jacob-Friesen (1967).

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, 168, fig. 18.
2. Gisors, Eure.
Cordier 1965, 38, fig. 5, 28; B 11; JF 1671.
3. Eure at Lery, Eure.
B 9; JF 1669.
4. Seine at Vernon, Eure.
B 10; JF 1670.
5. Oise at Ile du Grand Peuple, Armancourt, Oise.
Musée Vivienel, Compiègne.
Blanchet and Lambot 1975, 36 no. 14; the same spearhead is duplicated by Cordier (1965, fig. 4, 10-11), B5 and JF 1658-9.
Fig. 29, 2.
6. Oise above Jaux, Compiègne, Oise.
Blanchet and Lambot 1975, 37.
7. Seine at Pont Saint-Michel, Paris.
Mohen 1968, 794; B 83, pl. VI; B 13, Musée de l'Armée; JF 1682.
8. Paris area.
Mohen 1968, 795; B 13; JF 1683.
An uncertain number in MAN.
9. Seine at Elbeuf, Seine-Maritime.
Eluère 1972, 44, fig. 45; B 34; JF 1656.
10. Seine at Rouen, Seine-Maritime.
B 7; JF 1655.
11. Amiens, Somme.
Ash 1927.2220.
Gaucher and Mohen 1974, 106, Amiens 12, ill. 28, b; B 40; JF 1654.
Fig. 29, 3.
12. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Musée Carnavalet, Paris, PR 204.
Cordier 1965, 38, fig. 4, 7; B 14; JF 1675a.
Fig. 29, 4, after a drawing provided by N. Freidin.

13. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Cordier 1965, 38, fig. 4, 9; B 14, JF 1674.
14. Gonfreville-l'Orcher, Seine-Maritime.
Coutil 1921, pl. II; JF 1667.
Bronze mould said to be for basal-looped spearheads. There is no recent publication of this piece and Rowlands is dubious of its identification (1976, 60-61); not mapped.

The identification of the example from the Seine at Paris in the Musée Carnavalet, JF 1681, is uncertain.

Belgium

15. Nethe at Duffel, Antwerp.
Butler 1963a, 109 no. 8; Desittere 1976, 89, fig. 4, 2. JF 1712.
16. Geraardsbergen, E. Flanders.
Desittere 1976, 89, fig. 4, 1.
17. Scheldt at Wichelen, E. Flanders.
Mariën 1952, afb. 213, 2; Desittere 1976, 89; JF 1714.

Netherlands

18. Bargerroosterveld, Drenthe.
Butler 1960a, fig. 48; JF 1718, Taf. 108, 5.
19. Exlooërmond, Drenthe.
Butler 1963a, 109 no. 4, fig. 28b; JF 1720, Taf. 108, 6.
20. Onstwedde, Groningen.
Ibid., no. 6, fig. 28a.

LIST 21. Ogival-bladed spearheads. MAP 14.

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 19.
2. Baux-Sainte-Croix hoard, Eure (43).
Two examples.
3. Oise near Ile du Grand Peuple, Armancourt, Oise.
Blanchet and Lambot 1975, 37 no. 15, fig. 17.
4. Oise at Compiègne, Oise.
Ibid., 37 no. 17, fig. 16.
5. Seine at Paris.
Duval 1961, 50, fig. 23 centre.
6. Rouen, Seine-Maritime.
MAN.
7. R. Noye at Chaussoy, Somme.
Blanchet and Lambot 1975, 59 no. 64.
8. Sucy-en-Brie hoard, Val-de-Marne (68).

Belgium

9. Dender at Geraardsbergen, E. Flanders.
Museum Vleeshuis, Antwerp, 2225.
Desittere and Weissenborn 1977, 30 no.18.
10. Oudenaarde, E. Flanders.
Museum Vleeshuis, Antwerp, 2255.
11. Temse, E. Flanders.
Janssens 1967, afb. 4 left.
12. Vurste, E. Flanders.
Desittere and Weissenborn 1977, 32 no. 40, fig. 21.
13. Wichelen, E. Flanders.
Museum Vleeshuis, Antwerp, 3541.
14. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 33 no. 43.
15. Tournai, Hainaut.
Ibid., 31 no. 33.
16. Eksel, Limburg.
Mariën, 1952, afb. 254, 4.

England

17. Orsett hoard, Essex (105).

LIST 22. Nordic and central European spearheads. MAP 14.

Netherlands

Bagterp type

1. Blerick, Limburg.
Jacob-Friesen 1967, 380 no. 1741, Taf. 8, 12.
2. Overloon hoard, Limburg (82).

Valsømagle type

3. De Zilk, S. Holland.
Ibid., 134, 380 no. 1745, Taf. 30, 4; Butler 1963c, 244, c.

Smørumovre type

4. Nijmegen, Gelderland.
Jacob-Friesen 1967, 380 no. 1732, Taf. 52, 10.

Hulterstad type

5. Weerdinger Veen, Drenthe.
Ibid., 159, 379 no. 1725, Taf. 91, 9.

Lüneburg type II

6. Bakkeveen, Friesland.
Ibid., 187, 380 no. 1727; Boeles 1951, pl. 6, 3.

7. Nijmegen, Gelderland.

Jacob-Friesen 1967, 187, 380 no. 1733, Taf. 100, 3.

North-west German

8. Overloon hoard, Limburg (82).

Central European

North-eastern France

9. Oise above Janville, Oise.

Blanchet and Lambot 1975, 35-36 no. 13.

Netherlands

10. Dale, nr. Aalten, Gelderland.

Jacob-Friesen 1967, 108, 379 no. 1728, Taf. 16, 8; Butler 1963c, 245.

11. De Zilk, S. Holland.

Jacob-Friesen 1967, 108n. 17; Butler 1963c.

12. Ageler Broek, Ootmarsum, Overijssel.

Jacob-Friesen 1967, 264, 380 no. 1742, Taf. 163, 4.

LIST 23. Treboul-Saint-Brandan swords.

North-eastern France

1. Seine above Villeneuve-Saint-Georges, Val-de-Marne.

Schauer 1972c, 20 no. 17; de Mortillet 1908, pl. LXXIV, 841.

Belgium

2. Mechelen, Antwerp.

Schauer 1972c, 20 no. 21, Abb. 1, 3.

Netherlands

3. Waal ? at Nijmegen, Gelderland.

Ibid., no. 22, Abb. 1, 2; Butler and Bakker 1961, 204, figs. 7-8.

LIST 24. Plougrescant-Ommerschans swords.

England

1. Kimberley, Norfolk.

BM WG 2062.

Greenwell 1902, 3-4, fig. 2; Rowlands 1976, 415 no. 1857, pl. 44.

Fig. 30, 2.

Netherlands

2. Ommerschans hoard, Overijssel (86).

3. Jutphaas, Utrecht.

Butler and Sarfatij 1970-71.

LIST 25. Sögel swords. MAP 15.

Belgium

1. Melle, E. Flanders, possibly from the Scheldt.
Museum Vleeshuis, Antwerp, 2229.

Netherlands

2. Drouwen, Drenthe (25).
3. Nijmegen, Gelderland.
RMOL e 1948/7.6.
4. Nijmegen, Gelderland.
Rijksmuseum Kam, Nijmegen.
5. Meuse at Borgharen, Limburg.
Butler 1969, foto 5.
6. Meuse at Venlo, Limburg.
RMOL 1 1936/12.2.

LIST 26. Wohlde swords. MAP 15.

Belgium

1. Melsele-Polder, Zwijndrecht, Antwerp.
Mariën 1952, 193, afb. 178.
2. Melle, E. Flanders.
De Laet 1974, 298.
3. Huy, Liège.
Ibid., ? Dawans 1972, 323 no. 30.

Netherlands

4. Bergsham, Garderen, Gelderland.
Glasbergen 1954b, 46, 48, fig. 49; Hulst 1971, 10, afb. 9.
From barrow 3b.
5. Nijmegen, Gelderland.
De Laet 1974, 298.
6. Putten, Gelderland.
Ypey 1956; Elzinga 1957.
7. Overloon hoard, Limburg (82).
Two samples.
8. Venlo, Limburg.
De Laet 1974, 298, fig. 138, left.

At least nine Wohlde blades are known from the Netherlands according to Butler (Inv. Arch. NL13).

LIST 27. Tumulus daggers. MAP 15.

England

1. Hitchin, Herts.
Rowlands 1976, 356 no. 1152, pl. 35.
2. Wroxeter, Salop.
Gerloff 1975, 158 no. 236.
3. Nr. Lewes, Sussex.
Rowlands 1976, 357 no. 1164, pl. 35.
4. Winterbourne Bassett, Wilts.
Ibid., 201; Gerloff 1975, 158 no. 234.
5. ? Thames.
Rowlands 1976, 357 no. 1164, pl. 35.

Scotland

6. Luce Bay, Wigtownshire.
Ibid., 201, pl. 35.
7. ? East Lothian.
Gerloff 1975, 158 no. 235.

Ireland

8. Lagore, Co. Meath.
Eogan 1966a.

North-eastern France

9. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 38, pl. V, 1-4, 7, 13; 1936, fig. 50.
Several examples.
10. Seine at Paris.
Ash 1927.2230.
Fig. 29, 5.
11. Abbeville, Somme.
Gaucher and Mohen 1974, 104, Abbeville 9, ill. 15.
12. ? Amiens, Somme.
Ibid., 108, Amiens suppose 4, Breuil 1900, fig. 2, 1.
13. Amiens Museum.
Gaucher and Mohen 1974, 108, Amiens Musée 10; Breuil 1901, fig. 1, 5.
14. Arry, Somme.
Gaucher and Mohen 1974, 109, Arry 1; Breuil 1901, fig. 1. 1.
15. Villers-sur-Authie hoard, Somme. (67).
Two examples.
16. Sucy-en-Brie hoard, Val-de-Marne (68).

Belgium

17. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 38 no. 52, fig. 26.

LIST 28. Trapezoidal-hilted rapiers. MAP 16.

North-eastern France

1. Saint-Quentin, Aisne.
Briard 1965, fig. 32, 5; Blanchet 1976a, fig. 32, 3.
2. Seine at Corbeil, Essonne.
De Beauchene 1961, fig. 2a.
Narrow midrib, bevelled edges.
3. Seine at Les Andelys, Eure.
Coutil 1928, pl. II, 30.
4. Seine near Caumont, Eure.
Verron 1971, 54 no. 18.
Group. IV.
5. Seine at Criquebeuf-sur-Seine, Eure.
Ibid., no. 16.
6. Seine near Oissel, Eure.
Ibid., no. 17.
Group II.
7. Seine at Pitres, Eure.
Ibid., no. 15.
Group IV.
8. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. V, 8, 10, 15.
Includes Group III.
9. Sèvres, Hauts-de-Seine.
MAN.
Group IV.
10. Lille, Nord.
Mohen 1972, 449 fig. 2, 4; Gaucher and Mohen 1974, 116, Lille 5.
Group IV.
11. Bresles, Oise.
J. Cl. Blanchet.
12. Noailles, Oise.
Ash 1927.2242.
Fig. 31, 2.
Group III.
13. Seine at Paris.
Mohen 1968, 781 B56a, pl. I.
Group II.

14. Seine at Paris.
Ibid., 783 B56b, pl. I.
Group IV.
15. Seine at Paris.
Ibid., 783 B56c, pl. I.
Group IV.
16. Seine at Paris.
Ash 1927.2228.
Group III.
17. Seine at Paris.
Ash 1927.2229.
Group IV.
18. Paris.
MAN.
Group III.
19. Probably Seine at Paris.
O'Connor 1977.
Narrow midrib, bevelled edges.
20. Seine at Paris.
BM WG 125.
Fig. 31, 3.
21. Vaudricourt hoard, Pas-de-Calais (57).
Group IV. Blade fragment.
22. Seine at Elbeuf, Seine-Maritime.
Eluère 1972, 30-31, fig. 30.
Group III.
23. Mont-Saint-Aignan hoard, Seine-Maritime (61).
Lozenge section, offset edges.
24. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens environs 8.
25. Authuille or Menil-Martinsart, Somme.
Ibid., 109, Authuille.
26. Etinehem, Somme.
Ibid., 114, Etinehem 1.
27. Glisy, Somme.
Ibid., 114, Glisy 1.
28. Pont-Remy, Somme.
Ibid., 117, Pont-Remy 2, ill. 14b. ? part of Erondelle hoard (118).
Group III.

Belgium

29. Battel, Antwerp.
Museum Vleeshuis, Antwerp 2236.

30. Scheldt at St. Lievenspoort, Ghent, E. Flanders.
Desittere 1974b, 147 no. 11, fig. 10.
Group III.
31. Gottem, E. Flanders.
University Museum, Ghent.
Fig. 31, 4.
Narrow angular midrib, offset edges.
32. Melle, E. Flanders.
Museum Vleeshuis, Antwerp 2250.
Group III.
33. Wichelen, E. Flanders.
De Laet 1974, 302.

Netherlands

34. Emmen, Drenthe.
Butler 1963a, 114.
35. Lobith, Gelderland.
Butler 1963a, 114-115; de Laet 1974, 302.
36. Rijksmuseum RM Kam, Nijmegen.
Butler 1963a, 114.
37. Linne, Limburg.
De Laet 1974, 302.
38. Maastricht, Limburg.
Butler 1963a, 114-115.
Atypical.

LIST 29. Solid-hilted rapiers.

England

1. Ambleside hoard, Westmorland (112).

Ireland

2. Kanturk, Co. Cork.
Harbison 1969, 15 no. 81.

North-eastern France

3. Mont-Saint-Aignan hoard, Seine-Maritime (61).
4. Abbeville area, Somme.
Gaucher and Mohen 1974, 105, Abbeville environs 12, ill. 14a.
Blade broken.

LIST 30. Disc-headed pins. MAP 17.

Britain

1. Shrewton, Wilts.
Moore and Rowlands 1972, 50, pl.IV, J; Gerloff 1975, 250 no. 8, pl.57, D.

Belgium

2. Merendree, E. Flanders.
Mariën 1952, afb. 182.
Ornamented sinuous shaft.

Netherlands

3. Elp, Drenthe (76).
Burial g. Peripheral flange and central knob on head.
4. Zuidlaren, Drenthe (81).
Two examples, both with incised ornament, one with twisted shaft.
5. Noordwijkerhout, S. Holland.
Butler 1963c, 244.
Conical boss on head, incised ornament on shaft.

LIST 31. Nail-headed pins. MAP 17.

Netherlands

1. Vorstenbosch, N. Brabant.
Modderman 1959; Butler 1969, afb. 13.
Ornamented shaft. Probably associated with a Hilversum urn.
2. Elp, Drenthe (76).
Burial d. Recessed head.
3. Nijlande, Drenthe.
Van Giffen 1941; Glasbergen 1954b, 22, fig. 48b, 6, 33, Drente 24.
Barrow II. Two examples.
4. Weerdinge, Drenthe (80).
Ornamented shaft.
5. Emst, Gelderland.
Van Giffen 1930, 74-76, Taf. 70, 2.

LIST 32. Roll-headed pins. MAP 17.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 53, 27, 40.
Two examples. Twisted shafts.

Netherlands

2. Hijken, Drenthe (77).
Twisted shaft.
3. Weerdinge, Drenthe (80).
Ornamented shaft.

LIST 33. Wheel-headed pins. MAP 17.

Britain

1. Ipswich Museum.
A. J. Lawson, BAR 67, 1979.
Cruciform centre, triple-ribbed circumference, three loops.
Not mapped.

Netherlands

2. Weerdinge, Drenthe (80).
Two examples. Cruciform centre, inner wheel with four additional spokes, plain circumference, one loop.
3. Waal near Nijmegen, Gelderland.
Kubach 1977, 222 n. 2.
Criss-cross openwork.

LIST 34. Pins with long ribbed heads. MAP 18.

North-eastern France

1. Seine between Morsang and Saintry, Essone.
Toulouze 1891, fig. 10.
2. Baux-Sainte-Croix hoard, Eure (43).
3. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 53, 11, 15.
4. Seine at Paris.
Musée de l'Homme 57.5.26.
Fig. 32, 1.
5. Arry, Somme.
Gaucher and Mohen 1974, 109, Arry 3, ill. 22b.
6. Villeneuve-Saint-Georges, Val-de-Marne.
Audouze and Courtois 1970, 11 n. 10.

LIST 35. Trumpet-headed pins.

North-eastern France.

1. Vendeuil, Aisne.
Lobjois 1976, 146-148, fig. 44, 6.
2. Seine at Paris.
Musée de l'Homme 57.5.28.
Fig. 32, 3.

LIST 36. Picardy pins. MAP 18.

Britain

1. St. Margaret's-at-Cliffe, Kent.
Hawkes 1942, 29, fig. 2, 4.
Disc head, swollen perforated shaft with incised ornament.

2. St. Lawrence's College, Ramsgate, Kent (27).
Three examples, all with thick disc heads and swollen perforated shafts, two have knobbed heads and two have ornamented shafts.
Associated with a Deverel-Rimbury bucket urn.
3. Layham, Suffolk.
Ipswich Museum 1974-80.C.
Fig. 32, 2.
Fragmentary, swollen perforated shaft with incised ornament.
4. Thames at Wandsworth, Surrey.
Hawkes 1942, 29, fig. 2, 5.
Thick disc head, knobbed, swollen shaft with incised ornament.

North-eastern France

5. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. VIII, 11.
Trumpet head, swollen perforated shaft with incised ornament.
6. Breuil-le-Sec, Oise.
Blanchet 1975a.
Thick disc head, knobbed, swollen perforated shaft with incised ornament.
7. Amiens, Somme.
Gaucher and Mohen 1974, 106, Amiens 13, ill.22c.
Small thick disc head, knobbed, swollen perforated shaft with incised ornament.
8. Caix hoard, Somme (140).
Small thick disc head, swollen perforated shaft with incised ornament.
9. Villers-sur-Authie hoard, Somme (67).
Three examples, all with small thick disc heads and swollen shafts with incised ornament; two heads knobbed, two shafts perforated, one looped.

LIST 37. Pins related to Picardy pins.

Britain

1. Nr. R. Fowey, Cornwall.
Rathleigh 1809; Herity 1969, 16-17, pl. XIV.
Expanded head inset with amber, swollen looped shaft with incised ornament.
2. Tredarvah, Cornwall (4).
Trumpet head, swollen looped shaft with incised ornament.
3. Plaitford hoard, Hants.
Swollen looped shaft with incised ornament.
4. Thames at London.
Brailsford 1953, 34, fig. 13, 10.
Trumpet head, swollen looped shaft with grooved ornament.

5. Hunstanton hoard, Norfolk (28).
Recessed trumpet head, looped shaft with angular ribs and incised ornament.
6. South Cadbury, Somerset.
J. C. Barrett.
Found in an Iron Age pit in the hillfort. Thick disc head, knobbed, straight shaft with three zones of incised ornament separated by ribs and grooves.
7. South Wiltshire.
Rowlands 1976, 202, 431 no. 2026, pl. 19.
Recessed trumpet head, double swelling with incised ornament on shaft.

Ireland

8. Corran, Co. Armagh.
Eogan 1964, fig. 6, 11.

North-eastern France

9. Baux-Sainte-Croix hoard, Eure (43).
Ribbed head tapering to shaft which bears angular ribs.
10. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 53, 36.
Swollen perforated shaft.
11. Seine between Oissel and Grand-Couronne, Seine-Maritime.
Dubus 1912, 26, pl. III, 2.
Disc head swollen looped shaft with incised ornament.
Presumably the example mentioned by Mohen (1972, 451).
12. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens suppose 2; Breuil 1907, fig. 1, 10.
Thick disc head, swollen looped shaft.
13. Plainseau hoard, Somme (178).
Small thick disc head, knobbed, looped swollen shaft with ribbed ornament.

LIST 38. Disc-headed pins with looped or perforated straight shafts.

MAP 18.

England

1. Dorchester, Dorset.
Piggott 1949, 112, fig. 3.
Multiple knobs on head, looped shaft with lozenge plate and incised ornament.
2. Lakenheath, Suffolk.
Ibid., fig. 4, left.
Perforated shaft with lozenge plate.

3. Hanley Cross Barrow, Sussex (35).
Perforated shaft with lozenge plate.
4. Rushall Down, Wilts.
Annable and Simpson 1964, 70 no. 616.
Multiple knobs on head, looped shaft, loop broken off.
5. Ingleton, Yorks.
Piggott 1949, 112, fig. 4, right.

Scotland

6. Glentrool hoard, Kirkcudbright.
Coles 1959-60, 18, 114 no. 8, pl. 1, 11; 1963-64, 122, fig. 16.
Looped shaft.

Ireland

7. 'Ireland'.
Coles 1959-60, 18 n. 18; Eogan 1964, 282, fig. 6, 10; 1974b, 74.
Two examples, both with looped shafts, one with trumpet head.

North-eastern France

8. Aubigny-au-Bac, Nord.
Mohen 1972, 451, fig. 3, 3; Gaucher and Mohen 1974, 109,
Aubigny-au-Bac 1, ill. 30.
Looped shaft with incised ornament.
9. Amiens, Somme.
Breuil 1907, fig. 1, 7; Gaucher and Mohen 1974, 106, Amiens 14.
Thick head with knob, looped shaft with incised ornament.

LIST 39. Miscellaneous pins.

England

1. Ipswich Museum.
A. J. Lawson, BAR 67, 1979.
Trumpet head with rounded top; lower part of shaft has round section,
upper part square.

North-eastern France

2. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 53, 37.
? Looped shaft, head missing.
3. Abbeville area, Somme.
Gaucher and Mohen 1974, 105, Abbeville environs 13, ill. 22a.
Upper part only. Slightly expanded head with bands of incised herring-
bone ornament on neck.
4. Amiens area, Somme.
Breuil 1907, fig. 1, 4; Gaucher and Mohen 1974, 108, Amiens suppose
3.
Trumpet head, slightly swollen neck with four groups of ribs.

Netherlands

5. Overloon hoard, Limburg (82).
Slightly expanded head, perforated shaft.
6. Haamstede, Zeeland.
Butler 1956.
Conical head, perforated assymmetrical swelling on shaft.

LIST 40. Twisted neck-rings.

Numbers preceded by B refer to the list of Butler (1963a).

England

1. Burwell Fen, Cambs.
A. J. Lawson, BAR 67, 1979; B1.
2. Green End Road hoard, Cambridge.
Clark 1938, pl. VI.
Fragment.
3. Fyfield Neville, Dorset.
Rowlands 1976, 205.
4. Haselbury Bryan hoard, Dorset.
Drew 1934, pl. facing p. 131; Rowlands 1976, 232 no. 35, pl. 59; B2.
5. Holywell hoard, Dorset.
Rowlands 1976, 232 no. 36, pl. 61; B3.
Two examples.
6. Tarrant Monckton hoard, Dorset.
Rowlands 1976, 233 no. 59, pl. 60; B4.
Five examples.
7. Langstone Harbour, Hants.
Southsea Castle Museum.
8. Plaitford hoard, Hants (13).
B5.
Two examples.
9. Woolmer Forest hoard, Hants (17).
Two fragments, reused.
10. Carisbrooke Castle Museum (22).
11. Thames at Westminster, London.
B6.
This is probably one of the neck-rings from the Spaxton hoard (List 40, 21; Rowlands 1976, 205-206).
12. Barton Bendish hoard, Norfolk.
Inv. Arch. GB7, 6-7; B7.
Two examples.
13. Hunstanton hoard, Norfolk (28).

14. Catsholm House, Methwold, Norfolk.
Rowlands 1976, 430 no. 2012 (but not pl. 16); B8.
15. Stoke Ferry, Norfolk.
Norwich 1966, 24, fig. 41; Rowlands 1976, 205, 251 no. 98.
Supposedly a hoard of six neck-rings but there was probably only one example.
16. Near Cothelstone House, Somerset.
Warre 1849-50, 43; B9.
'A bronze torque and a celt', possibly a twisted neck-ring.
17. Chillington Down, near Crewkerne, Somerset.
Rowlands 1976, 430 no. 2014, pl. 59; B10.
18. Edington Burtle hoard, Somerset.
Inv.Arch. GB44, 1; B 11.
19. Monkswood hoard, Somerset.
Inv. Arch GB42, 12-15; B12.
Three examples.
20. Pen Pits, near Penselwood, Somerset.
Rowlands 1976, 430 no. 2015; B13.
Fragments.
21. Spaxton hoard (Quantocks), Somerset.
Rowlands 1976, 205-206, 257 no. 116, pl. 59; B14.
Two examples.
22. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 19; B15.
23. Taunton Museum.
Rowlands 1976, 431 no. 2017, pl. 59; B18.
24. Wedmore hoard, Somerset.
Rowlands 1976, 260 no. 122; B16.
25. West Buckland hoard, Somerset (30).
B17.
26. Sandford Hill, Winscombe, Somerset.
Grinsell 1968, 40 no. 65a, fig. 13.
27. Hollingbury hoard, Sussex.
Rowlands 1976, 267 no. 143, pl. 60; B19.
28. Durnford hoard, Wilts.
Moore and Rowlands 1972, 61-63 no. 74, pl.XIV; B21.
Three examples. Two in Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection 2J 30-31.
29. Ebbesbourne Wake hoard, Wilts.
Moore and Rowlands 1972, 63, pl. XV; B20.
Several writers (Smith 1959, 156; Rowlands 1971a, 185; 1976, 271 no. 155; Moore and Rowlands 1972, 63) have claimed that this hoard was found in a lynchet, but the original publication states that it was

found, 'right in the middle of a well defined lynchet field of the Celtic type, 58 feet from a steep negative lynchet (the nearest)'. (Shortt 1949-50); its position has been recorded correctly by Bowen (n.d. (1961), 18 n. 8) and Piggott (1973, 391 n.60).

30. Bank of the R. Avon, Wilts.
Smith 1959, 155; Rowlands 1976, 205.
Two examples.

Scotland

31. Glentrool hoard, Kirkcudbright.
Coles 1959-60, pl. 1; 1963-64, 122-124, fig. 16; B23.

Ireland

32. Annesborough hoard, Co. Armagh.
Eogan 1964, 274, fig. 4, 1.

North-eastern France

33. Villers-sur-Authie hoard, Somme (67).

Belgium

34. Dave hoard, Namur (123).
Four examples, tapering terminals, decorated on one example.
35. Grand-Gard, Namur (124).
Tapering terminals.

Netherlands

36. 'A reported torc fragment find from the Netherlands.'
Rowlands 1976, 89.

LIST 41. Decorated bracelets. MAP 19.

England

1. Cambridge area hoard, Cambs. (3).
Eight examples, all penannular, six with contingent terminals.
2. Grimstone hoard, Dorset (8).
Annular.
3. Milton Abbas, Dorset.
Rowlands 1976, 429 no. 1998, pl. 21.
Annular.
4. Tarrant Gunville, Dorset.
Ibid., no. 2000.
Annular.
5. Navestock, Essex.
Colchester and Essex Museum, Colchester.
Fragments of two bracelets and one complete annular bracelet.
Now corroded, perhaps originally decorated. Oval sections, less massive than most decorated bracelets.

6. Gable Head hoard, Hants (12).
Annular.
7. Liss, Hants.
Rowlands 1971a, figs. 2, 4; 3, 5.
Two examples, penannular with contiguous terminals.
8. Milton hoard, Portsmouth, Hants.
Crawford and Wheeler 1920-21, 139, fig. 4; Rowlands 1976, 242
no. 68.
Four examples, all annular.
9. Hollicondane, Ramsgate, Kent (26).
Two examples, penannular.
10. Kent.
Rowlands 1971a, fig. 2, 1-2.
Two examples, penannular.
11. Canterbury Museum, Kent.
Ibid., fig. 3, 7.
Annular.
12. R. Thames, probably Southwark.
Ibid., fig. 3, 6.
Penannular, contingent terminals.
13. Hunstanton hoard, Norfolk (28).
Annular with false terminals.
14. Norton Fitzwarren hoard, Somerset (29).
One pair annular, one pair penannular.
15. Ebbesbourne Wake hoard, Wilts.
Moore and Rowlands 1972, 75 no. 2, pl. XV; Rowlands 1971a, fig. 2, 3.
Annular.

North-eastern France

16. Essonne.
J. P. Mohen.
17. Gisors, Eure.
Musée Municipal, Evreux 3643.
Briard 1965, 132.
Fig. 32, 4.
Annular.
18. Longchamps hoard, Eure (49).
Four examples, all annular.
19. Plasnes, Eure.
Briard 1965, 132. Not mapped.
20. Rougemontiers, Eure.
Verron 1971, 57 no. 27.
Two examples, annular.

21. Saint-Cyr-du-Vaudreuil, Eure.
Musée Municipal, Evreux 3645.
Verron 1976a, 590.
Fig. 32, 5.
Annular with false terminals.
22. Fort-Harrouard hoard, Eure-et-Loir.
Philippe 1927, 40-41, pl. VII, 1-7.
Seven examples, six penannular with contiguous expanded terminals,
one annular with false terminals.
Ibid., pl. VII, 9.
Fragment found with wire bracelet and a pair of tweezers.
23. Eaury, Seine-Maritime.
Briard 1965, 130. Not mapped.
24. Le Hanouard hoard, Seine-Maritime (59).
Originally five examples, including one penannular; one bracelet
preserved, annular with false terminals.
25. Seine at Elbeuf, Seine-Maritime.
Eluère 1972, 34-36, figs. 32-33.
Two examples, annular with false terminals.
26. Rosay, Seine-Maritime.
Coutil 1921, 806, pl. 6.
Two examples, penannular.
27. Rouen, Seine-Maritime.
Millotte and Vignard 1960, 23 no. 84, pl. XVII.
Fragmentary.
28. Tourville-la-Rivière hoard, Seine-Maritime.
Verron 1971, 59 no. 28.
Five examples, all penannular.
29. Villers-sur-Authie hoard, Somme (67).
Twelve examples, all annular.
30. Villeneuve-Saint-Georges, Val-de-Marne.
Gaudron 1951.
Annular.
31. Les-Clayes-sous-Bois hoard, Yvelines.
J. P. Mohen.

Belgium

32. Vise, Liège.
Dawans 1972, 325, pl. XI, below.

LIST 42. Ribbed bracelets. MAP 20.

England

1. Isleham hoard, Cambs. (127).
One fragment with five irregularly spaced notched ribs; tapering form.

2. Knighton Down, Devon.
 Ash 1875.52-3. Cast.
 Evans 1881, fig. 520; Hodges 1960, 153-154, 160, pl. I, C;
 Rowlands 1976, 229 no. 23.
 Fig. 31, 1.
 Pair of schist mould for rapiers of Group II with a matrix
 for a strip c. 30 cm long bearing four longitudinal ribs. Not mapped.
3. Hollicondane, Ramsgate, Kent (26).
 Straight sides, eleven ribs, central and peripheral ribs thicker.
4. Near Catsholm House, Methwold, Norfolk.
 Norwich 1966, 24, fig. 43.
 Sides tapering to narrow thickened terminals, nine ribs.
 Dubious provenance. Not mapped.
5. Edington Burtle hoard, Somerset.
 Inv. Arch. GB44, 4.
 Straight sides, notches in the grooves, five ribs. Also a finger-ring
 of similar form (ibid., 5).
6. Monkswood hoard, Batheaston, Somerset.
 Inv. Arch. GB42, 9.
 Straight sides, three irregular ribs with wide plain borders.
7. Norton Fitzwarren hoard, Somerset (29).
 Pair of fragmentary ribbed bracelets; one ribbed bracelet with a
 central line of bosses.
8. West Buckland hoard, Somerset (30).
 Ribbed bracelet with a central line of bosses.
9. Durnford hoard, Wilts.
 Annable and Simpson 1964, 71 no. 626; Moore and Rowlands 1972,
 61-62.
 Straight sides, seven ribs, recurved terminals.
10. South Lodge Camp, Rushmore, Wilts.
 Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers
 Collection 2F 2 23.
 Pitt Rivers 1898, 25, pl. 238, 6.
 Fig. 32, 6.
 Five ribs, slightly tapering terminal. From enclosure ditch
 (ibid., pls. 234, G; 237, G, 236, fig. 2).
11. Thorny Down, Wilts.
 Salisbury and South Wiltshire Museum, Salisbury, 164/1938.
 Stone 1935-37, 652-654, pl. V. 19; Moore and Rowlands 1972, 64, no.
 77, pl. XVI.
 Fig. 32, 7.
 Fragmentary, with the remains of four ribs, outer and third ribs notched.
 There is little evidence for Stone's reconstruction. Found unstratified
 in the settlement (Stone 1935-37, pl. II).

North-eastern France

12. Boves, Somme.
MAN 29321.
Gaucher and Mohen 1974, 111, Boves 1.
Fig. 32, 8.
Straight sides, eight ribs, peripheral and one of the central ribs
larger and notched, plain terminals.

Netherlands

13. Ballooërveld, Rolde, Drenthe (78).
Two examples from the second burial, tapering sides with twelve
ribs, expanded terminals with two transverse ribs. Two fragments of
similar bracelets from the third burial.
14. Ommerschans hoard, Overijssel (86).
Fragment of flat strip, straight sides, six irregular ribs, plain
terminal.
Not mapped.

LIST 43. Plain penannular bracelets.

England

1. Sonning, Berks.
Rowlands 1976, 224 no. 3, pl. 11.
Two examples, round section.
2. Isleham hoard, Cambs. (127).
Fragments with lozenge section.
3. Bryanston hoard, Dorset.
Rowlands 1976, 231 no. 30, pl. 12.
Round section.
4. Grimstone hoard, Dorset. (8).
Lozenge section.
5. Holywell hoard, Evershot, Dorset.
Brailsford 1953, 34, fig. 13, 3; Rowlands 1976, 232 no. 36, pl. 61.
Lozenge section.
6. Haselbury Bryan hoard, Dorset.
Drew 1934, pl. facing p. 131; Rowlands 1976, 232 no. 35, pl. 59.
Two examples, round section.
7. Milton Abbas, Dorset.
Rowlands 1976, 429 no. 1997, pl. 21.
Massive flattened oval section.
8. Flower Down, Littleton, Hants.
Ibid., 429 no. 2004.
Lozenge section.
9. Woolmer Forest hoard, Hants. (17).
Three examples, all massive, two with round section, one with D-section.

10. Brading hoard, Isle of Wight.
Crawford and Wheeler 1920-21, 138, pl. X; Rowlands 1976, 238 no. 56.
Eleven examples with round, oval or sub-rectangular sections.
11. Barton Bendish hoard, Norfolk.
Inv. Arch. GB7, 11.
Sub-rectangular section.
12. Edington Burtle hoard, Somerset.
Inv. Arch. GB44, 6, 10.
Two examples, one lozenge section, one flat section.
13. Monkswood hoard, Batheaston, Somerset.
Inv. Arch. GB42, 3-7.
Five examples, one triangular section, four lozenge section.
14. Norton Fitzwarren hoard, Somerset (29).
Massive section, corroded and fragmentary, possibly annular.
15. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 14.
Twelve concentric arcs of lozenge section. There are four similar fragments, probably from quoit-headed pins.
16. Blackrock hoard, Sussex (34).
Two examples, massive D-section with contiguous expanded terminals.
17. Durnford hoard, Wilts.
Moore and Rowlands 1972, 61-63 no. 74, pl. XIV; Annable and Simpson 1964, 71 nos. 621-625.
Seven examples, two lozenge section, two flat section.
18. Ebbesbourne Wake hoard, Wilts.
Shortt 1949-50; Moore and Rowlands 1972, 63-64 no. 75, pl. XV.
Six examples, two lozenge section, two round section, one sub-rectangular section, one massive round section.

North-eastern France

19. Villers-sur-Authie hoard, Somme (67).
Two examples, massive irregular section.

Belgium

20. Bois-de-Lessines hoard, Hainaut (121).
Two examples, round section.

Netherlands

21. Ballooërveld, Drenthe (78).
From the third burial, lozenge section.
22. Weerdinge, Drenthe (80).
23. Veenenburg hoard, S. Holland (125).
Six examples.

LIST 44. Twisted bracelets.

England

1. Barton Bendish hoard, Norfolk.
Inv. Arch. GB7, 5, 8-10.
Four examples, two rod, two wire.
2. Monkswood hoard, Batheaston, Somerset.
Inv. Arch. GB42, 8, 10-11.
Three examples, one massive rod, two wire.
3. Taunton Union Workhouse hoard, Somerset.
Inv. Arch. GB43, 20.
Massive rod.
4. Berwick St. John, Wilts.
Pitt Rivers 1888, 38, pl. LXXXVI, 5; Rowlands 1976, 205.
From ditch silt of barrow 10. Possible fragment of a twisted wire bracelet.

North-eastern France

5. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 54, 1, 3, 6, 9.
One complete example with tapering terminals, one coiled fragment, two recurved fragments. All apparently rod.

Belgium

6. Denterghem, W. Flanders.
Claerhout 1901, 193-195, pl. VIII, 2; de Loë 1931a, 122.
Rod.
7. Bois-de-Lessines hoard, Hainaut (121).
Smooth tapering terminals.

Netherlands

8. Sleenerzand, Drenthe (79).
Wire.

LIST 45. Tumulus bracelets or anklets.

North-eastern France

1. Laon Museum, Aisne.
Copy of drawing provided by N. Freidin.
Spiral bracelet, D-section, rolled terminal; probable local provenance.
2. Boulogne, Pas-de-Calais.
Mohen 1972, 449-450, fig. 3, 4; Gaucher and Mothen 1974, 51, 110, Boulogne-sur-Mer 4, ill.29.
Sheet bracelet with double spiral terminals and incised ornament.

Belgium

3. ? Prov. Limburg.
Desittere and Weissenborn 1977, 53 no. 102, fig. 6.
Spiral bracelet, D-section.

Netherlands

4. Emmer Dennen, Emmen, Drenthe.
Bursch 1936, 59-61, afb. 43, 2; Glasbergen 1954b, 23, 29, fig. 48b, 5.
Barrow 6. Bracelet or anklet, flat section with longitudinal ribs, single spiral terminals.

LIST 46. Spiral belt-hooks.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 54, 2.

Netherlands

2. Elp, Drenthe (76).
Grave g.

LIST 47. Finger-rings. MAP 21.

England

1. Kent's Cavern, Torquay, Devon.
Pearce 1971-74, 188, fig. 3, 8.
Coiled.
2. Dorchester, Dorset.
Rowlands 1976, 428 no. 1994, pl. 21.
Ribbed.
3. Maiden Castle, Winterbourne Monkton, Dorset.
Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection, 2J 27.
Fig. 32, 9.
Coiled.
4. Verne, Portland, Dorset.
Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection, 2J 28.
Simple penannular, flat section.
5. Bramshill Park, Liphook, Hants.
Rowlands 1976, 429 no. 2003, pl. 21.
Coiled.
6. Woolmer Forest hoard, Hants. (17).
Two examples, both twisted, one coiled.

7. Barton Bendish hoard, Norfolk.
Inv. Arch. GB7, 12-13.
Two examples, one flat section, coiled, the other simple penannular.
8. Edington Burtle hoard, Somerset.
Inv. Arch. GB44, 3, 5, 7-9.
Five examples, two ribbon, one twisted, one rectangular section, one ribbed.
9. Undley, Lakenheath, Suffolk.
Rowlands 1976, 431 no. 2021, pl. 21.
Annular, ribbed.
10. Blackrock hoard, Sussex (34).
Coiled, incised ornament.
11. Cowfold hoard, Sussex.
Rowlands 1976, 266 no. 138.
Coiled.
12. Hollingbury hoard, Sussex.
Ibid., 267 no. 143, pl. 60, fig. 3.
Three examples, coiled.
13. Stump Bottom hoard, Sompting, Sussex.
Smith 1959, fig. 4, 5-9.
Five examples, three coiled, one annular, one simple penannular.
14. Durnford hoard, Wilts.
Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection, 2J 33-35.
Moore and Rowlands 1972, 61-63 no. 74.
Three examples, two flat section, one coiled.

North-eastern France

15. Villers-sur-Authie hoard, Somme (67).
Two examples, simple penannular.

Netherlands

16. Weerdinge, Drenthe (80).
Annular.
17. Veenenburg hoard, S. Holland (125).
Thirteen examples, annular.

LIST 48. Razors.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 54, 18, 20, 22.
Three examples, all tanged with notched blades.
2. Seine at Paris.
Ash 1927.2037.

Jockenhövel 1971, 33 n. 2.

Fig. 32, 10.

Onstmettingen type.

Netherlands

3. Drouwen, Drenthe (75).
Tanged, oval blade.
4. Opheusden, Drenthe.
Ypey 1962-63, 189-191, afb. 3, A.
Obermenzing type. Apparently found in a Merovingian pot with a Roman coin and an early Urnfield pin (list 86, 4).
5. Noordse Veld, Zeijen, Drenthe.
Van Giffen 1949, afb. 22a, 76; Butler 1963a, 117, fig. 33, 6.
(the caption 'Gasteren' is incorrect).
Tanged with notched blade. Found within an Early Iron Age ditched enclosure.

LIST 49. Tweezers.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 41, pl. IX, 30.
Narrow. Found with a fragment of a decorated bracelet
(List 41, 22).

Netherlands

2. Rechte Heide, Goirle, N. Brabant (74).
Broad.
3. Sleenerzand, Drenthe (79).
Narrow.

LBA1

LIST 50. Rosnoën and related palstaves. MAP 23.

Britain

1. Dover hoard, Kent (108).
Several examples probably Rosnoën.

North-eastern France

2. Anzin hoard, Nord (114).
Small, unlooped. Possibly residual MBA.
3. Douai, Nord.
Mohen 1972, 451, fig. 3, 2; Gaucher and Mohen 1974, 113, Douai.
Trident ornament.
4. Saint-Just-en-Chausée hoard, Oise (115).
Tapering midrib.
5. Seine at La Vaquerie, Seine-Maritime (117).
c. 30 examples, presumable Rosnoën.
6. Abbeville, Somme.
Breuil 1905, fig. 4, 39; Gaucher and Mohen 1974, 47.
Tapering midrib.
7. Amiens, Somme.
Ash 1927.2140.
Breuil 1905, fig. 4, 40; Gaucher and Mohen 1974, 47.
Fig. 37, 1.
Tapering midrib.
8. Erondelle hoard, Somme (118).
Trident ornament.

Belgium

9. Beveren, E. Flanders.
Museum Vleeshuis, Antwerp 2309.
10. Scheldt at Wortegem, E. Flanders.
Desittere 1976, 30, fig. 4, 11.
Trident ornament.
11. Flemalle-Haute, Liège.
Dawans 1972, 316 no. 10, pl. VI, right.
Tapering midrib.

Netherlands

12. Nijmegen, Gelderland.
RMOL I 556.
Fig. 37, 2.

LIST 51. Median-winged axes. MAP 24.

Britain

1. Dover hoard, Kent (108).
Thirty examples, plus one blade edge. All massive with straight sides.
2. Thames at Thames Ditton, Surrey.
C. B. Burgess.
3. Alexandra Dock, Hull, Yorks.
Burgess 1968b, 34, fig. 7, 3.
Massive, straight sides, butt broken, blade worn.

North-eastern France

Numbers preceded by MCA refer to the list of Millotte, Cordier and Abauzit 1968.

4. Corbeil, Essonne.
MCA 52 no. 157.
5. Seine at Grigny, Essonne.
MCA 52 no. 158, 53 no. 195.
Two examples, both massive with straight sides.
6. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 28.
Massive, straight sides.
7. Saint-Cheron hoard, Essonne (113).
MCA 54 no. 161.
Massive, slightly constricted sides.
8. Seine at Caumont, Eure.
MCA 33 no. 44bis.
Massive, straight sides, blade worn.
9. Anzin hoard, Nord (114).
MCA 48 no. 115.
Massive, straight sides.
10. Bailleul-sur-Therain, Oise.
MCA 48 no. 116.
Massive, straight sides.
11. Longueil-Sainte-Marie, Oise.
Blanchet and Marquis 1977, fig. 1.
Massive, straight sides.
12. Saint-Just-en-Chausée hoard, Oise (115).
Butt fragment.

13. Saint-Leger-aux-Bois, Oise.
MAN.
J.-Cl. Blanchet.
14. Paris.
MCA 51 no. 144.
Massive, slightly constricted sides, butt broken.
15. Seine at Paris.
BM WG 2264.
Fig. 37, 3.
Massive, straight sides.
16. ? Seine at Paris.
MCA 52 no. 145.
Massive, slightly constricted sides.
17. Saint-Leonard hoard, Pas-de-Calais (116).
Two examples, massive with straight sides.
18. Longueville-sur-Scie, Seine-Maritime.
MCA 52 no. 146.
Massive, straight sides.
19. Rouen Museum, Seine-Maritime.
MCA 52 no. 147.
Narrow butt, blade worn.
20. Amiens, Somme.
MCA 54 no. 162; Briard and Verron 1976b, 14, fig. 2, 1.
Blade worn.
21. Amiens Museum, Somme.
Gaucher and Mohen 1974, 109, Amiens Musée 15, 123.
Looped.
22. Erondelle hoard, Somme (118).
MCA 54 nos. 165-167.
Twelve examples.
23. R. Somme.
Gaucher and Mohen 1974, 47.

Belgium

Numbers preceded by D refer to Desittere 1974a, liste 2.

24. Scheldt between Wichelen and Schellebelle, E. Flanders.
D 12; Desittere and Weissenborn 1977, 23 no. 11, fig. 3.
Massive, straight sides.
25. Flanders.
University Museum, Ghent.
Fig. 37, 6.
Blade worn, slight offset below wings. Not mapped.

26. Flemalle-Haute, Liège.
D 13; Dawans 1972, 316 no. 11, pl. VII, left.
27. Odet, Liège.
Dawans 1972, 317 no. 12, pl. VII, right.
Sub-terminal wings.
28. Maaseick, Limburg.
Musee Curtius, Liège.
Claassen 1971, 154.
Massive, ? one of the axes from the Neeroeteren hoard (List 51, 29).
29. Neeroeteren hoard, Limburg (122).
D 11.
Four examples.
30. Menil-Favai, Hotton, Luxembourg.
D 15; Mariën 1952, aff. 251.
Massive, offset below wings, narrow butt.
31. Han-sur-Lesse, Namur.
Mariën 1974, 225, fig. 1.
Two examples, narrow butts.

The provenances of the following axes are not reliable; they are not mapped.

(Desittere 1974a, 120).

32. Antwerp.
Museum Vleeshuis, Antwerp 2295.
Fig. 37, 4.
33. Aalst, ? E. Flanders.
Museum Vleeshuis, Antwerp 2298.
Worn and reworked.
34. Daknam, E. Flanders.
Museum Vleeshuis, Antwerp 2296.
Fig. 37, 5.
Massive, narrow butt.

LIST 52. Looped socketed axes. MAP 25.

Numbers preceded by B and R refer to the lists of Butler 1963a, 79, and Rowlands 1976, 347-349.

England

1. Cambridge.
CMAE 04.362.
B 1; R 1076, pl. 34.
Fig. 37, 7.
2. Cambridge area, Cambs.
CMAE 2.4277.
R 1077.
Fig. 37, 8.

3. Quy Fen, Cambs.
CMAE 83.136.
B 3; R 1078, pl. 34.
Fig. 37, 9.
4. Soham, Cambs.
B2; R 1079, pl. 34.
5. Orsett hoard, Essex (105).
6. Weston Subedge, Gloucs.
B 12; R 1080.
7. Hitchin, Herts.
B 7; R 1081, pl. 34.
8. Dover hoard, Kent (108).
Two examples, one looped, the other broken.
9. Harpole, Northants.
R 1087, pl. 34.
10. Lulsgate, Somerset.
R 1088.
11. Stogumber, Somerset.
R 1089.
12. Icklingham, Suffolk.
R 1090, pl. 34.
13. Mildenhall, Suffolk.
B 5; R1091.
14. R. Stour at Sudbury, Suffolk.
B 6; R 1092.
15. Betchworth, Surrey.
Frere and Hooper 1946; B 9; R 1083.
16. Thames at Kingston, Surrey.
Burgess 1962a, fig. 2, d; R 1084, pl. 34.
17. Thames at Thames Ditton, Surrey.
B 8; R 1085.
18. Thames.
Burgess 1962a, fig. 2, c; B 14; R 1086. Not mapped.
19. Salisbury Plain.
B 11; R 1093. Not mapped.

Wales

20. Penard hoard, Glam. (107).
21. Trawsfynydd, Merioneth.
Burgess 1962a, fig. 2, a.

22. Ty Freeman. Monmouth.
Ibid., 17-18, pl. I, fig. 1.

Scotland

23. Nr. Annan, Dumfries.
National Museum of Antiquities, Edinburgh.
B 16; Coles 1963-64, fig. 14, 4.
Fig. 37, 11.
24. Kingoldrum, Forfar.
National Museum of Antiquities, Edinburgh.
B 15; Coles 1963-64, fig. 14, 3.
Fig. 37, 10.

North-eastern France

25. Brasles, Aisne.
Briard and Verron 1976b, 29, fig. 1, A.
Partition across socket at right angles to plane of blade.
Not mapped.
26. Unprovenanced.
Musée Departmental des Antiquités de la Seine-Maritime, Rouen,
73. 7.8.
Fig. 37, 12.

Belgium

27. Flanders.
University Museum, Ghent.
Fig. 37, 13.
Not mapped.

LIST 53. Unlooped socketed axes. MAP 25.

England

1. Churn Farm, Blewbury, Berks.
O'Connor forthcoming a.
2. Soham, Cambs.
Rowlands 1976, 350 no. 1101, pl. 34.
3. Tregaer Camp, Bodmin, Cornwall.
Ibid., 351 no. 1103.
4. Torquay, Devon.
Ibid., 351 no. 1104.
5. Burnham, Suffolk.
Moyses Hall Museum, Bury St. Edmunds, 176.
Ibid., 353 no. 1126, pl. 34.
Fig. 38, 1.

North-eastern France

6. Pontavert, Aisne.
Agache 1974, 440, fig. 22.
From the upper part of the fill of a ring-ditch.
7. Rouen, Seine-Maritime.
Musée Departmental des Antiquités de la Seine-Maritime, Rouen.
Verron 1971, 77, fig. 80a.
Fig. 38, 2.

LIST 54. Ring-socketed sickles.

Numbers preceded by F refer to Fox 1939, Appendix I.

Britain

1. Thames at Tilehurst, Berks.
F 5, pl. XXIV.
2. Thames nr. Windsor, Berks.
F 7, pl. XXIV.
3. Isleham hoard, Cambs. (127).
4. ? Nr. Derby.
F 10, fig. 2.
5. Downham Market hoard, Cambs. (110).
F 13, fig. 2.

Ireland

6. Castle Dawson, Co. Derry.
F 62, fig. 2.
7. Lawrencetown, Co. Meath.
F 31, fig. 2.
8. Ireland.
F 40, fig. 2.
9. Ireland.
F 49, fig. 2.
10. Ireland.
F 57, fig. 2.

North-eastern France

11. Plainseau hoard, Somme (178).

LIST 55. Early Urnfield knives. MAP 26.

Britain

1. Fynhonnau hoard, Brecon (102).
Decorated convex back, damaged tang, probably originally hooked.

2. ? London.
Ash 1927.2394.
Evans 1881, 214.
Fig. 38, 3.
Convex back, hooked tang.

North-eastern France

3. Marne at Brasles, Aisne.
Lebel 1953, 353, fig. 82, left.
Two examples convex back, decoration on back and blade, plain tang.
4. Boutigny hoard I, Essonne (132).
Straight back, plain tang.
5. Boutigny hoard II, Essonne (133).
Decorated blade, plain tang.
6. Corbeil, Essonne.
J.-P. Mohen.
Recurved blade, plain tang.
7. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, 176, fig. 45.
Decorated convex back, plain tang.
8. Essonne.
J.-P. Mohen.
Convex back, perforated tang.
9. Combon hoard, Eure (164).
Convex back, plain tang.
10. Seine at Paris.
Nicolardot and Gaucher 1975, 51, fig. 1.
Concave back, plain tang.
11. Seine near Paris.
Ibid., 59, fig. 1.
12. Paris.
J.-P. Mohen.
Flanged hilt.
13. Chevilly-Larue, Val-de-Marne.
Kimmig 1954, 223, fig. 98, 2.
Convex back, perforated tang.

Belgium

14. Melle, E. Flanders.
Museum Vleeshuis, Antwerp, 1346.
Fig. 38, 4.
Convex back, tang broken off.
15. Melle, E. Flanders.
Museum Vleeshuis, Antwerp, 1351.

Fig. 38, 5.

Worn concave blade, plain tang.

16. Scheldt at Wichelen, E. Flanders.

MRAH Brussels, B 3050.

Fig. 38, 6.

Convex back, tang broken off but probably originally perforated.

17. Scheldt at Wichelen, E. Flanders.

MRAH Brussels, B 3050.

Worn blade, plain tang.

18. Tournai area, Hainaut.

Museum Vleeshuis, Antwerp.

Blade broken off, flanged hilt with four rivet-holes and fish-tail terminal.

19. Han-sur-Lesse, Namur.

Mariën 1974, 226, fig. 2.

Decorated convex back, perforated tang with collar.

Netherlands

20. Bargerroosterveld 1899 hoard, Drenthe (143).

Convex back, plain tang.

21. Bargerroosterveld 1900 hoard, Drenthe (199).

Two ribs on blade, plain tang.

22. Odoornerveen, Drenthe.

Butler 1960a, 109.

Similar to List 55, 20.

LIST 56. Straight-based basal-looped spearheads. MAP 27.

Numbers preceded by B, C, JF and S refer to the lists of Briard 1963, Cordier 1965, Jacob-Friesen 1967 and Schauer 1973.

North-eastern France

1. Seine at Pont de l'Arche, Eure.

B 8; C fig. 4, 4; JF 1668.

2. Essonne.

MAN.

3. Confluence of Oise and Aisne at Compiègne, Oise.

Doize 1965a, 251, fig. 1, 6; B 4; JF 1657.

4. Seine at Bercy, Paris.

Duval 1961, fig. 23, second from bottom; B 13; C fig. 4, 3;
JF 1676.

5. Seine at Paris.

B 13; C fig. 5, 12; JF 1680.

6. Seine at La Bouille, Seine-Maritime.

Verron 1975b, 510, fig. 49.

7. Amiens, Somme.
Gaucher and Mohen 1974, 106, Amiens 11, ill. 18c; B 3; C fig. 4, 1; JF 1651; S 6.
8. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens environs 7; Breuil 1903, 511, fig. 5, 38; B 3; C fig. 4, 2; JF 1652.
9. La Chaussée-Tirancourt, Somme (119).
B 2; C fig. 4, 5; JF 1649; S 5.
10. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
JF 1675; S 7.
Identification uncertain; not mapped.

Belgium

11. Battel, Mechelen, Antwerp.
De Laet 1974, 302; JF 1711; S 4.
12. Gentbrugge, E. Flanders.
Desittere 1975, 118 no. 32, fig. 1; 1976, 89, fig. 4, 3.
13. Scheldt at Oudenaarde, E. Flanders.
Mariën 1952, afb. 213, 3; Desittere 1976, 89; S 3.
14. Wetteren, E. Flanders.
Desittere 1976, 89, fig. 4, 4; Desittere and Weissenborn 1977, 33 no. 41, fig. 19.

Netherlands

15. Nijmegen, Gelderland.
Butler 1963a, 109 no. 7; Desittere 1976, 89; JF 1859; S 2.
16. Oude Rijn at Bodegraven, S. Holland.
Louwe Kooijmans 1972-73, 353 no. 48.

LIST 57. Conical ferrules.

Britain

1. Thames at Caversham, Berks.
Rowlands 1976, 395 no. 1602.
2. Thames at Taplow, Berks.
Ibid., no. 1606, pl. 36.
3. Leetside, Berwickshire.
Coles 1959-60, 86.
4. Fynhonnau hoard, Brecon (102).
Two examples.
5. Chislet, Kent.
Rowlands 1976, 395 no. 1604.
6. Thames at Isleworth, Middlesex.
Greenwell and Brewis 1909, pl. LXXX, fig. 75; presumably Rowlands 1976, 395 no. 1605, pl. 36.

7. Thames at Staines, Middlesex.
Burgess 1968a, fig. 2, 3; Rowlands 1976, 395 no. 1603, pl. 36.
8. Ambleside hoard, Westmorland (112).
9. R. Thames.
Rowlands 1976, 395 no. 1607, pl. 36.
10. Scotland.
Coles 1959-60, 86.

LIST 58. Tanged arrowheads. MAP 28.

Britain

1. Bokerly Dyke, Woodyates, Pentridge, Dorset.
Pitt Rivers 1892, 97, pl. CLXIII, 11.
2. Penard hoard, Glam. (107).
Burgess 1968a, fig. 2, 2; Mercer 1970, 213 no. 267.
3. Eriswell, Suffolk.
Moyses Hall Museum, Bury St. Edmunds.
Fig. 38, 7.
Probably the example from Lakenheath (Cunnington 1926, 182).
4. Water Dean Bottom, Enford, Wilts.
Cunnington 1926; Mercer 1970, 213 no. 169.

North-eastern France

5. Froidmont, Aisne.
Lobjois 1976, 151-152, fig. 44, 5.
6. Essonne.
J. -P. Mohen.
7. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 38-39, pl. VI, 4-6 (sheet), pl. VI, 1, 9, pl. XIII, 5-6 (cast), pl. VI, 3 (cast, spurred); 1936, fig. 50, 13, 15, 18, 20-23, 26-30, 35; 24-25 (spurred).
8. Royallieu, Compiègne, Oise.
J. -Cl. Blanchet.
9. Forest of Compiègne, Oise.
MAN 14.444, 28.885.
J. -Cl. Blanchet.
Two examples.
10. Bois de Damart, Oise.
De Mortillet 1903, pl. LXXXVIII, 1086; Mercer 1970, 207 no. 9.
Sheet.
11. Orrouy, Oise.
J. -Cl. Blanchet.
12. Paris.
Eluère 1972, 49 no. 46.

13. R. Seine, Seine-et-Oise.
De Mortillet 1903, pl. LXXXVIII, 1087; Mercer 1970, 208 no. 57.
Not mapped.
14. Amiens, Somme.
Breuil 1903, fig. 1, 3; Gaucher and Mohen 1974, 106, Amiens 1.
15. Moislains, Somme.
Gaucher and Mohen 1974, 117, Moislains; Breuil 1903, fig. 1, 1-2.
Mercer 1970, 207 no. 41.
Two examples; from a disturbed Merovingian burial.

Belgium

16. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, 5, fig. 9, 1.
Five examples.
17. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 36 nos. 49-50, figs. 23-24.
Two examples.
18. Zele, E. Flanders.
Museum Vleeshuis, Antwerp 1353.
Fig. 38, 8.
19. Han-sur-Lesse, Namur.
Mercer 1970, 211 no. 217.
Various examples in the Musée du Monde Souterrain, Han-sur-Lesse,
some spurred.

Netherlands

20. Hijken, Drenthe (77).
At least five examples. spurred.
21. Sleenerzand, Drenthe (79).
Mercer 1970, 209 no. 103.
At least fourteen examples.

LIST 59. Socketed arrowheads. MAP 28.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 38, pl. VI, 2; pl. XIII, 7 (spurred); 1936, fig. 50,
36.
2. Forest of Compiègne, Oise
MAN 14.125.
J.-Cl. Blanchet.
3. Abbeville, Somme.
Breuil 1903, 503.
4. Amien, Somme.
Ibid., fig. 1, 4; Gaucher and Mohen 1974, 107, Amiens 27.
Possibly from the Saint-Roch hoard (179).

Belgium

5. Hoogstraten, Antwerp.
De Loë 1931b, 5, fig. 9, 2.
6. Scheldt at Schoonaarde, E. Flanders.
MRAH Brussels.
Spurred.
7. Han-sur-Lesse, Namur.
Various examples in the Musée du Monde Souterrain, Han-sur-Lesse,
some spurred.

LIST 60. Sprockhoff Type I swords. MAP 29.

North-eastern France

1. Seine at La Bouille, Seine-Maritime.
Verron 1973, 397, fig. 44, 1.
Tapering blade with broad midrib, slightly rounded shoulders with
two pairs of rivet-holes, unperforated grip with straight sides divergent
towards butt.

Netherlands

2. Bosserfeld, Maastricht, Limburg.
Sprenger 1948, 21, pl. IV, afb. 10 above; Cowen 1955, 122 no. 28;
Schauer 1971, 127 no. 52.
Straight blade, damaged shoulders, swollen grip apparently unperforated,
flanges form projecting ears at butt.

LIST 61. Nenzingen swords. MAP 29.

North-eastern France

1. Aisne at Vic-sur-Aisne.
Patte 1971, 159, fig. 1, left.
Rosnoën hybrid; laterally curved blade.
2. Oudenaarde, E. Flanders.
Cowen 1955, 128 no 51.
3. Probably Scheldt at Schoonaarde, E. Flanders.
J. D. Cowen card index.

Netherlands

4. Heumen, Gelderland.
De laet 1974, 302.
5. Herten, Limburg.
Ibid.
6. Nr. Steenwijk, Overijssel.
Boeles 1951, 54-55, 482 no. 10, fig. 13, 3; Cowen 1955, 128 no. 52.

LIST 62. Buchloe/Grefferen swords. MAP 29.

North-eastern France

1. Saint-Just-en-Chaussée hoard, Oise (115).
Hilt fragment.

LIST 63. Stätzling swords. MAP 29.

North-eastern France

1. Seine at Issy-les-Moulineaux, Hauts-de-Seine.
Cowen 1955, 133 no. 7; Schauer 1971, 145 no. 15; (both give the provenance as 'Rouen'); Verron 1971, 55 no. 22; Gaucher and Mohen 1972, 521-522 n. 7, fig. 3b.

LIST 64. Rixheim swords.

North-eastern France

1. Abbeville Museum, Somme.
Burgess 1968a, fig. 1, 1; Gaucher and Mohen 1974, 105, Abbeville musée 8, ill. 27; Reim 1974a, 12 no. 21.
2. ? R. Seine.
Cabrol 1939, 414, fig. 8; Reim 1974a, 9 no. 10.

Belgium

3. Meuse at Huy, Liège.
Desittere 1961, fig. 2; Schauer 1971, 65 n. 6; Reim 1974a, 13, 34 n. 15.
Huy is preferable to 'Hoei-Statte' for the provenance (Mariën 1976, 68).

Netherlands

4. Stevensweert, Limburg.
Desittere 1961, fig. 3; Schauer 1971, 65 n. 7; Reim 1974a, 22 n. 23, 37 n. 7.
Stevensweert is in the Netherlands, not in Belgium (Mariën 1976, 68).

Rosnoën hybrids

North-eastern France

5. Saint-Just-en-Chaussée hoard, Oise (115).
6. Montières, Amiens, Somme.
Musée de Picardie, Amiens.
Gaucher and Mohen 1974, 49, 107, Amiens 22.
Fig. 39, 4.
Tapering hilt with two rivet-holes, tapering blade with broad midrib.

LIST 65. Monza swords. MAP 30.

North-eastern France

1. Seine at Paris.
Cordier 1974, fig. 1, 1; O'Connor 1976a.

2. Seine at Ile-Saint-Ouen, Seine-Saint-Denis.
Reim 1974a, 28 no. 45; 1974b, Liste 1, 11.

LIST 66. Grigny swords. MAP 30.

North-eastern France

1. Essonne.
MAN 26.002.
J.-P. Mohen.
2. Seine ? from Bardouville area, Seine-Maritime.
Verron 1973, 397, fig. 45, 2.
3. Seine at La Vaquerie, Seine-Maritime (117).
4. Choisy-le-Roi hoard, Val-de-Marne (120).

Belgium

5. Geraardsbergen, E. Flanders.
Museum Vleeshuis, Antwerp 2248.
De Laet 1974, 359-360.
Fig. 39, 3.
Total length c. 50 cm.

LIST 67. Pépinville swords. MAP 30.

North-eastern France

1. Rouen, Seine-Maritime.
MAN 30. 753.
J. -P. Mohen.
2. Tirancourt, Somme (119).
Reim 1974b, Liste 2, 11.

LIST 68. Arco and Terontola swords. MAP 30.

Arco

Britain

1. Thames at London.
Museum of London.
Burgess 1968a, 44; Rowlands 1976, 425 no. 1966, pl. 50.
Fig. 39, 2.
Tang broken off.

North-eastern France

2. Seine at Corbeil, Essonne.
Gaucher and Mohen 1972, 322, fig. 1.
3. Essonne.
MAN 26.002.
J.-P. Mohen.

4. Seine at Paris.
De Mortillet 1903, pl. LXXXVII, 1072; Déchelette 1910, fig. 61, 4;
Reim 1974b, Liste 3, 3.
5. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Musée de l'Homme 56.54.39.
De Beauchene 1961, fig. 3a.
Fig. 39, 1.
6. Mantes, Yvelines.
MAN.
7. Unprovenanced, possibly Paris area.
Mohen 1968, 793-794, pl. VIII, right IX, left. Reim 1974b, Liste 3.

Terontola

Belgium

8. Statte, Huy, Liège.
De Laet 1974, 359-360, fig. 69, centre; Desittere 1976, 34 n. 13.

LIST 69. Unterhaching swords. MAP 30.

North-eastern France

1. Paris.
MAN 360.
J.-P. Mohen.

LIST 70. Hemigkofen swords. MAP 31.

England

1. Barking Creek, Essex.
Cowen 1951, 212 no. 33; Schauer 1971, 158 n. 3.
2. Thames at Hammersmith Bridge.
Cowen 1951, 212 no. 32; Burgess 1968a, fig. 1, 3; Schauer 1971, 158 n. 13.
3. Thames at London.
Cowen 1951, 212 no. 31; Schauer 1971, 158 n. 13.
4. 'Thames'.
Cowen 1955, 137 no. 41; Schauer 1971, 158 n. 12.

North-eastern France

5. Seine at Vernon, Eure.
Cowen 1955, 136 n.31; Schauer 1971, 158 n. 11.
6. Oise near Creil, Oise.
Audouze 1972.
Presumably not from the Seine.

7. Rue Fontaine du Roi, Paris.
Musée de l'Homme, Paris. 56.54.38.
De Beauchêne 1961, fig. 3c; Gaucher and Mohen 1972, 523 n. 4.
Fig. 40. 1.
8. Longeau, Amiens, Somme.
Breuil 1900, fig. 4, 26; Cowen 1955, 136 no. 35; Schauer 1971,
158 n. 1; Gaucher and Mohen 1974, 54, 107, Amiens, Longeau,
Montières 7.

Belgium

9. Dikkelvenne, E. Flanders.
Cowen 1955, 136 no. 36; Schauer 1971, 158 n. 5; de Laet 1974,
357, fig. 168.

Uffhofen variant

England

10. R. Cam at the Cardyke, Waterbeach, Cambs.
Cowen 1955, 137 no. 43; Schauer 1971, 161 n. 10.
Not marked as an import by Burgess (1968a, fig. 6); not mapped.

Ireland

11. R. Erne nr. Ballyshannon, Co. Donegal.
Eogan 1965, 34 no. 51; Burgess 1974, 318 n.174.
12. Seine at Bligny, Essonne.
13. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Cowen 1955, 136 no. 33; Schauer 1971, 161 n. 7.

Belgium

14. Between Assenede and Ertvelde, E. Flanders.
Mariën 1952, 231, afb. 213, 1; Cowen 1955, 137 no. 37; Schauer
1971, 161 n. 1.
15. Hamme, E. Flanders.
Desittere 1961, fig. 1; Schauer 1971, 161 n. 3.

Netherlands

16. Venlo, Limburg.
Cowen 1955, 137 no. 38; Schauer 1971, 161 n. 9; de Laet 1974,
357, fig. 138, centre.

Elsfeld variant

North-eastern France

17. Jaux, Oise.
MAN 74.702.
J-Cl. Blanchet.

Netherlands

18. Heumen, Gelderland.
Sprockhoff 1931, 13, Taf. 7, 6; Schauer 1971, 164 n. 3.

LIST 71. Erbenheim swords. MAP 31.

England

1. Thames, probably near Brentford.
Cowen 1955, 132 no. 21; Schauer 1971, 169n. 17.
2. Thames, opposite the east end of Battersea Park.
Cowen 1955, 132 no. 20; Burgess 1968a, fig. 1, 2; Schauer 1971, 169 n. 16.
3. R. Lea below Stratford-at -Bow.
Cowen 1955, 131 no. 19; Schauer 1971, 169 n. 15.
4. Brixworth, Northants.
Kennett 1975, 17, fig. 7, B.

North-eastern France

5. Seine at Paris.
Cowen 1955, 131 no. 16; Schauer 1971, 169 no. 13; Gaucher and Mohen 1972, 521-522, fig. 2.

Netherlands

6. Ter Apel, Groningen.
Van der Waals 1962; Schauer 1971, 169 n. 10.
7. Meuse between Arcen and Blitterswijk, Limburg.
Cowen 1955, 131 no. 18; Schauer 1971, 169 n. 8.
8. Meuse at Tegelen, Limburg.
Cowen 1955, 131 no. 17; Schauer 1971, 169 n. 9.

LIST 72. Letten swords. MAP 31.

North-eastern France

1. Corbeil, Essonne.
J.-P. Mohen.
2. Seine at Paris.
Cowen 1955, 133 no. 6; Schauer 1971, 166 n. 3.
3. Rue Fontaine du Roi, Paris.
Musée de l'Homme, Paris 56.54.37.
De Beauchêne 1961, fig. 3b; Gaucher and Mohen 1972, 521-522 n. 6.
Fig. 40, 2.
4. Longeau, Amiens, Somme.
Breuil 1900, fig. 4, 25; Gaucher and Mohen 1974, 54, 109, Amiens, Longeau Montières 5.

Belgium

5. Scheldt at Melle, E. Flanders.
Cowen 1955, 133 no. 8; Schauer 1971, 166 n. 2.

LIST 73. Rosnoën swords. MAP 32.

North-eastern France

1. Corbeil, Essonne.
J.-P. Mohen.
2. Grigny, Essonne.
J.-P. Mohen.
3. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, fig. 39.
4. Essonne.
J.-P. Mohen.
Three examples.
5. Seine at Caumont, Eure.
Verron 1973, 397, fig. 46, right.
6. Wavrin, Nord.
Piningre 1976, 7-8, fig. 1.
7. Oise at Creil, Oise.
Blanchet and Lambot 1975, 62 no. 68.
8. Roverval, Oise.
J.-Cl. Blanchet.
Fragments of three examples.
9. Saint-Just-en-Chausée hoard, Oise (115).
Three examples with additional blade fragments.
10. Oise at Thourotte, Oise.
J. -Cl. Blanchet.
11. Oise at Verneuil-en-Hallatte, Oise.
Blanchet and Lambot 1975, 35 no. 12.
12. Seine at Paris.
Mohen 1968, 791 B60, pls. VI, VIII.
13. Seine at Bardouville, Seine-Maritime.
Verron 1973, 397, fig. 44, 4.
14. Seine at Bardouville, Seine-Maritime.
Ibid., 397-398, fig. 45, 3.
Remains of tang, blade curved laterally.
15. Seine at Rouen, Seine-Maritime.
Burgess 1968a, fig. 3, 3; Verron 1971, 55 no. 19.
16. Seine at La Vaquerie, Seine-Maritime (117).
Three examples with additional blades and daggers.

17. Abbeville, Somme.
Breuil 1901, fig. 1. 3; Gaucher and Mohen 1974, 104, Abbeville 12.
18. ? Amiens, Somme.
Breuil 1900, fig. 3, 14; Gaucher and Mohen 1974, 108, Amiens
suppose 6.
19. Bourdon, Somme.
Breuil 1900, fig. 3, 15; Gaucher and Mohen 1974, 111, Bourdon 2.
20. Seine at Charenton, Val-de-Marne.
Briard 1965, 167; J.-P. Mohen.
21. Choisy-le-Roi hoard, Val-de-Marne (120).
One example.
22. R. Seine.
Cabrol 1939, 414, fig. 7.

Some of the examples quoted by Briard (1965, 167, fig. 56) cannot otherwise be identified, e.g. Thiant, Nord, and are omitted from this list.

Belgium

23. Scheldt at Wichelen, E. Flanders.
Desittere 1976, 89, fig. 4, 5.
Shortened and reused.

Netherlands

24. Ekslooerkijl, Drenthe.
Ibid., 79 n. 1.
25. Weurt, Gelderland.
Ibid., 89.
26. Meuse at Roermond, Limburg.
Ibid.
27. Nijmegen, Gelderland.
Ibid.
28. Limburg.
De Laet 1974, 302, fig. 138, second left.

LIST 74. Appleby solid-hilted swords.

England

1. Salta Moss, Edderside, Cumberland.
Coles 1961, 16-17, pl. I, fig. 1.
Oval blade section with traces of bevelled edges. Hilt has slightly
concave base with two false rivets and a collar on the grip. Cast in one.
2. Cumberland.
Ibid., 17-18, pl. II, fig. 2.
Lozenge blade section. Hilt has slightly angular base with two false
rivets. Cast in one.

3. Appleby hoard, Lincs. (109).
Lozenge blade section. Hilt has straight base. Known from cast of original.
4. Ambleside hoard, Westmorland (112).
Hilt has slightly concave base. Known from old drawing.

North-eastern France

5. Seine ? from Bardouville area, Seine-Maritime.
Verron 1973, 397, fig. 44, 2.
Lozenge blade section with traces of bevelled edges. Hilt has angular base with central V-shaped notch and two false rivets.

LIST 75. Ballintober and related swords. MAP 33.

North-eastern France

1. Seine at Pas-de-Grigny, Essonne.
MAN.
2. Seine at Les Andelys, Eure.
Coutil 1928, pl. III, 32bis.
3. Bresles, Oise.
J.-Cl. Blanchet.
4. Seine at Bardouville, Seine-Maritime.
Verron 1973, 397, fig. 44, 2.
Flat blade. Chelsea type.
5. Seine at Rouen, Seine-Maritime.
Verron 1971, 55 no. 20.
? Chelsea type.
6. Somme at Abbeville, Somme.
Gaucher and Mohen 1974, 104, Abbeville 3, ill. 26c.
7. Somme at Port-le-Grand, Abbeville, Somme.
Musée Boucher de Perthes, Abbeville.
Gaucher and Mohen 1974, 118, Port-le-Grand 2, ill. 26a.
Fig. 41, 2.
Lozenge blade section, four notches in oval-section hilt.
8. Amiens, Somme.
Breuil 1900, fig. 3, 16; Gaucher and Mohen 1974, 106, Amiens 10.
Two notches in butt.
9. Eaucourt, Somme.
Breuil 1900, fig. 3, 13; Gaucher and Mohen 1974, 113, Eaucourt 1.
Four notches in pointed hilt.
10. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Briard 1965, 164, fig. 55, 4.

LIST 76. Miscellaneous swords.

England

1. Chatham Dockyard, Kent.
Jessup 1933; Rowlands 1976, 423 no. 1945, pl. 50.
Narrow straight-bladed sword with irregular oval section, blunt ricasso and tapering hilt with two notches.
2. Methwold, Norfolk.
CMAE 33. 505.
Trump 1968, 221, fig. 54, 2; Rowlands 1976, 426 no. 1978.
Fig. 39, 5.
Straight sided blade, lozenge section with midrib, becoming indistinct lower down and flanked by faint grooves on one side on the blade. The hilt has two pairs of notches, one large, one small.
3. Trent nr. Nottingham.
Nottingham Castle Museum 68.420.
Burgess 1968a, 44; Rowlands 1976, 427 no. 1980, pl. 50.
Fig. 40, 3.
Broad straight-sided blade with lozenge section and blunt ricasso, tapering to narrow hilt with two pairs of notches. Below the hilt both sides of the blade bear incised ornament, four hatched triangles on one side and three hatched triangles and a triple zig-zag line on the other.
4. Thames at Kingston, Surrey.
BM 1863 22 114.
Trump 1962, 98 no. 205; Butler 1963a, 123.
Fig. 41, 3.
Tapering blade with offset edges and narrow midrib; blade and midrib expand to form broad angular shoulders from which rises a straight tang.

North-eastern France

5. Seine nr. Pont Saint-Michel, Paris.
Mohen 1968, 793 B58, pls. VI, VII; Gaucher and Mohen 1972, 311, fig. 2.
Straight-sided blade with lozenge section and bevelled edges; convex hilt with two notches. The upper part of the blade bears incised ornament of four double circles and two double V-motifs.

Belgium

6. Dendermonde, E. Flanders.
Museum Vleeshuis, Antwerp 2241.
Fig. 39, 4.
Several fragments of a straight bladed sword, oval section blade with slight offsets defined by grooves; the hilt has two pairs of notches in its sides and another in its top.

Netherlands

7. Heumen, Gelderland.
De Laet 1974, 359.

Drawing provided by J. J. Butler.

Narrow straight blade with oval section, ricasso, narrow tang.

LIST 77. Nipperwiese shields.

England

1. Old branch of the Thames at Long Wittenham, Berks.
In private possession.
Thick bronze. Central dome with peripheral step, two concentric ribs, thickened rim. Handle and two tabs attached by rivets with large bossed heads. Two perforations, one apparently caused by the tip of a spear-head.
2. Mixnam's Pit, Thorpe, Surrey (possibly a derived river find).
Chertsey Museum; S. Needham.
Thick bronze. Central dome with peripheral step, two concentric ribs, plain rim. Handle and two tabs attached by rivets with large bossed heads.

LIST 78. Helmets.

North-eastern France.

1. Oise near Ile du Grand Peuple, Armancourt, Oise.
Hencken 1971, 66, fig. 39; Blanchet and Lambot 1975, 45-46, fig. 35.
Crested with pointed cap. Sheets joined by three conical rivets at each seam. The rim is inturned with two spaced ribs above; the upper rib has a pair of holes above and below on each side of the helmet; above each upper pair a vertical rib rises to the apex of the cap.
2. Oise at Montmacq, Oise.
Hencken 1971, 62, fig. 34, a-b; Blanchet and Lambot 1975, 44-45, fig. 34.
Crested with nearly conical cap. Sheets joined by two conical rivets at each seam, flanked by a boss on either side. The rim is everted with a double rib above, the lower rib is perforated by a pair of holes on each side of the helmet.
3. Oise at Montmacq, Oise,
Hencken 1971, 62, fig. 34, c-d; Blanchet and Lambot 1975, 44-45, fig. 33.
Crested with nearly conical cap. Sheets have two rivet-holes at each seam, one pair is empty, the other contains one flat rivet and one projecting rivet with a flattened end. The rim is everted with a row of bosses above, perforated by a pair of holes on each side of the helmet. These two helmets were not found together.
4. Seine at Paris.
Hencken 1971, 62, fig. 35.
Crested with nearly conical cap. Sheets joined by two conical rivets at each seam, one pair flanked by a boss on either side. The rim is everted with a single rib above, perforated by a pair of holes on each side of the helmet.

5. Seine at Mantes-la-Jolie, Yvelines.
Ibid., 126-128, fig. 97.
Made of a single sheet with a hollow crest. Three spaced incised lines above inturned rim, perforated by fifteen holes.

Belgium

6. Scheldt at Schoonaarde, E. Flanders.
Ibid., 126, fig. 95.
Dome-shaped cap made of a single sheet. The rim is inturned, perforated by a single hole on each side. Three groups of horizontal incised lines above the rim.

LIST 79. Greaves.

North-eastern France

1. Saint-Pierre-en-Chastre, Oise (171).
MAN 15.647.
J.-Cl. Blanchet.
Urnfield type. Fragmentary.

LIST 80. Poppy-head pins. MAP 34.

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 14.
2. Seine at Paris.
Musée de l'Homme 57.5.27.
Fig. 38, 9.

Belgium

3. Scheldt at Schoonaarde, E. Flanders.
MRAH Brussels B 2983.
Fig. 38, 10.

Derivatives

England

4. Bank of R. Ebbles at Homington, Wilts.
Salisbury and South Wiltshire Museum, Salisbury 13/1969.
Moore and Rowlands 1972, 65 no. 78, pl. XVI.
Fig. 38, 13.

North-eastern France

5. Fort-Harrouard, Eure-et-Loir.
Sandars 1957, fig. 80, 3.

Belgium

6. Scheldt at Schoonaarde, E. Flanders.
MRAH Brussels B 2983.
Fig. 38, 11.

7. Wichelen, E. Flanders.
Museum Vleeshuis, Antwerp.
Fig. 38, 12.

LIST 81. Pins with trumpet heads and ribbed swollen shafts. MAP 34.

England

1. Thames at Kingston, Surrey.
Brailsford 1953, 34, fig. 13, 9; Rowlands 1976, 430 no. 2008.
pl. 19.
Angular ribs.
2. ? Sussex.
Rowlands 1976, 431 no. 2022, pl. 50.
Angular ribs. Not mapped.

North-eastern France

3. Seine at Bligny, Essonne.
De Mortillet 1903, pl. XCIII, 1198.
4. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, figs. 3, 5-6, 8.
Four examples.
5. Saint-Cheron hoard, Essonne (113).
Two examples.
6. Seine between Oissel and Grand Couronne, Seine-Maritime.
Dubus 1912, 26, pl. III, 3.
Shaft bent, head missing.
7. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens suppose 1; Breuil 1907,
fig. 1, 1.
8. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens suppose 1; Breuil 1907,
fig. 1, 2.
Cruciform ornament on head.
9. Amiens area, Somme.
Gaucher and Mohen 1974, 108, Amiens suppose 3; Breuil 1907,
fig. 1, 4.

Belgium

10. R. Dyle at Battel, Antwerp.
Mariën 1956, 91-92, fig. 6.
Looped.
11. Schoonaarde, E. Flanders.
Museum Vleeshuis, Antwerp 2071.
Fig. 38, 14.
12. Bois-de-Lessines hoard, Hainaut (121).
Two examples.

Netherlands

13. Meuse at Alem, N. Brabant.
Braat 1964, 188, Abb. 5, 1.
14. Rotterdam Museum.
Ypey 1967, 101,afb. 3, 022.
Possibly of Belgian or northern French origin.

LIST 82. Collared pins. MAP 34.

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 2.
2. Saint-Just-en-Chaussée hoard, Oise (115).
3. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
De Mortillet 1903, pl. XCIII, 1199.

LIST 83. Pins with globular heads and incised ornament. MAP 34.

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 4.
2. Seine at Paris.
Musée de l'Homme 57.5.31.
Fig. 38, 15.

LIST 84. Guntersblum pins. MAP 34.

Belgium

1. Han, Namur.
Mariën 1974, 225, fig. 1.

LIST 85. Pins with bands of incised ornament on the shaft. MAP 34.

Netherlands

1. Laren, N. Holland.
Butler 1969,afb. 19.
2. Veenenburg hoard, S. Holland (125).
Three examples.

LIST 86. Wollmesheim pins. MAP 35.

Belgium

1. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, 5, fig. 8, third right.
2. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 48 no. 89, fig. 48.

Netherlands

3. Meuse at Alem, N. Brabant.
Braat 1964, 188, Abb. 5, 2.
4. Opheusden, Gelderland.
Ypey 1962-63, 189, aff. 3, B.
Apparently found in a Merovingian pot with a Tumulus razor
(List 48, 4) and a Roman coin.

LIST 87. Pins related to the Binningen type. MAP 35.

Belgium

1. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, fig. 8, second right.
2. Temse-Veldmolenwijk, E. Flanders.
De Laet, Nenquin and Spitaels 1958, 120, fig. 165.

LIST 88. Pins with biconical or sub-biconical heads and radiating ornament.
MAP 35.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Audouze 1971, fig. 1, 2.
Locus F412, associated with a roll-headed pin.
2. Fort-Harrouard, Eure-et-Loir.
Ibid., fig. 1, 3.
Locus F547, associated with pottery of the end of Bronze Final II
(ibid., fig. 3).
3. Jardin du Luxembourg, Paris.
Ibid., fig. 1. 1.

LIST 89. Shepherd's crook pins. MAP 35.

Britain

1. Dinorben, Denbigh.
Gardner and Savory 1964, 132, fig. 17, 1; Savory 1971, 23; 1976a,
17, fig. 35, 6.

North-eastern France

2. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, 599, fig. 53, 20-21.
Two examples.

LIST 90. Pins with spindle-whorl heads. MAP 35.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Mordant and Prampart 1976, 159 n. 22.

2. Seine at Paris.
Ash 1927,2054.
Fig. 38, 16.
3. Seine at Paris.
Ash 1927.2055.
Fig. 38, 17.
4. Seine, Seine-et-Oise.
Mordant and Prampart 1976, 159 n. 22.

LIST 91. Pins with broad ribbed biconical heads. MAP 35.

England

1. Near Cambridge, Cambs.
Ash 1927.2392.
Evans 1881, 371, fig. 459; Rowlands 1976, 203, 428 no. 1988, pl. 19.
Fig. 38, 18.

North-eastern France

2. Seine at Paris.
Ash 1927.2057.
Fig. 38, 19.
3. Seine at Paris.
Ash 1927.2058.
Fig. 38, 20.

LIST 92. Pins with broad convex heads. MAP 35.

North-eastern France

1. Seine at Pas-de-Grigny, Essonne.
Mordant and Prampart 1976, 155 n. 10.
2. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, 599, fig. 53, 19.

Netherlands

3. Gasteren, Drenthe.
Van Giffen 1945, 118 no. 97, 103 no. 18b, afb. 15B, 54b;
Butler 1969, afb. 32.
Found in cremation burial 54 under round barrow 41 (van Giffen 1945, afb.16) in a Gasteren urn with an accessory vessel and a bronze spiral bead (ibid., 102-103 nos. 18-18c, afb. 15B, 54-54c; Butler 1969, foto 29; Waterbolk 1962, Abb. 7, 3-3a).

LIST 93. Pins with flat biconical heads. MAP 35.

England

1. Thames at Old England, Brentford, Middlesex.
Museum of London A.11732.
Fig. 38, 21.

2. Thames at Sion Reach, Middlesex.
Museum of London A.26061.
Fig. 38, 22.

North-eastern France

3. Seine at Paris.
Ash 1927.2056.
Fig. 38, 23.
4. Seine at Paris.
Musée de l'Homme 57.5.30.
Fig. 38, 24.

LIST 94. Bracelets.

North-eastern France

1. Anzin hoard, Nord (114).
Two examples, penannular, round section with incised ornament.
2. Lacroix-Saint-Ouen, Oise.
Musée Vivenel, Compiègne.
Blanchet and Lambot 1975, 37-38 no. 18.
Fig. 38, 25.
Penannular, slightly thickened terminals, triangular section. Lines of pointillé ornament along the apex and sides flanking alternate groups of diagonal lines; transverse bands of pointillé and lines on surviving terminal.

Belgium

3. Bois-de-Lessines hoard, Hainaut (121).
Penannular, round section with incised ornament.

LIST 95. Belt ornaments.

North-eastern France

1. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, fig. 41; Audouze 1974, 257 no. 34, fig. 4, 14.
Oval body, cruciform terminals.

LBA 2

LIST 96. Palstaves. MAP 37.

North-eastern France

1. Boutigny hoard II, Essonne (133).
Two examples.
2. Combon hoard, Eure, (164).
Massive.
3. Fort-Harrouard hoard, Eure-et-Loir (136).
Massive.
4. Clairoix, Forest of Compiègne, Oise.
MAN 28.948.
Fig. 51, 2.
Undecorated, British.
5. Paris.
J.-P. Mohen.
Two examples.
6. Canteleu hoard, Seine-Maritime (139).
Twelve fragments or complete examples, one massive unlooped, at least two British.
(Fig. 49C, 1-2).
7. Bussu, Somme.
Breuil 1905, fig. 4, 38; Gaucher and Mohen 1974, 111, Bussu.
Decorated, British.
8. Luzarches hoard, Val-d'Oise (141).
Fifteen fragments, those identifiable are massive.
9. Unprovenanced.
MAN 31.026.
Fig. 51, 1.
Decorated, British.

Belgium

10. Asper, E. Flanders.
Museum Vleeshuis, Antwerp 2302.
British.
11. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 22-23 no. 10, fig. 6.

Netherlands

12. Bargerosterveld 1900 hoard, Drenthe (199).
One complete example, one fragment, both British.

LIST 97. Winged axes. MAP 38.

North-eastern France

1. Boutigny hoard I, Essonne (132).
2. Boutigny hoard II, Essonne (133).
Two fragments.
3. Champcueil hoard, Essonne (134).
4. Morsang-Saintry hoard, Essonne (135).
5. Essonne.
J.-P. Mohen.
Several examples.
6. Combon hoard, Eure (164).
Two examples.
7. Forest of Compiègne, Oise.
J.-Cl. Blanchet.
Fragments of four examples.
8. Pontpoint hoard, Oise (137).
9. Seine at Paris hoard (138).
Two examples.
10. Pont du Flandres, La Villette, Paris.
J.-P. Mohen.
Bronze mould for winged axes.
11. Caix hoard, Somme (140).
Five examples.

LIST 98. Socketed axes with shouldered blades. MAP 39.

Britain

1. Swaffham, Cambs.
CMAE 48.301B.
Fig. 51, 4.

North-eastern France

2. Pontpoint hoard, Oise (157).
Two examples.
3. Faubourg de Ham, Amiens, Somme.
Gaucher and Mohen 1974, 106, Amiens 18.
Musée de Picardie, Amiens 158.
Fig. 51, 5.

LIST 99. Indented socketed axes. MAP 39.

North-eastern France

1. Boutigny hoard I, Essonne (132).
Looped with single mouth moulding.
2. Oise at Saint-Leu-d'Esserent, Oise.
J.-Cl. Blanchet.
3. Déville-les-Rouen hoard, Seine-Maritime (173).
Unlooped, round mouth.
4. Abbeville area, Somme.
Gaucher and Mohen 1974, 104, Abbeville environs 6.
MAN 6.534.
Fig. 51, 9. Looped with single mouth moulding, rounded mouth.
5. Amiens area, Somme.
Ibid., 107, Amiens environs 2.
Musée de Picardie, Amiens 157.
Fig. 51, 10.
Looped with triple mouth moulding, round mouth.
6. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Savory 1964-66, 185 n. 8; Burgess 1968a, 13 n. 42.
Unlooped.

Netherlands

7. 's-Hertogenbosch, N. Brabant.
Butler 1960a, 121.

LIST 100. Miscellaneous socketed axes.

Britain

1. Carse Loch, Kirkcudbright.
Coles 1959-60, 26, fig. 4, 8; Butler 1963a, 91, fig. 26.
National Museum of Antiquities, Edinburgh.
Fig. 51, 11.
Looped with straight sides and hexagonal section; the faces bear vertical grooves and the lower part of the blade is abruptly bevelled.
2. Thames at London.
Ash 1955.156.
Fig. 51, 12.
Looped with oval mouth; mouth moulding above zone demarcated by a horizontal rib, this zone contains a pellet; three V-ribs depend from the horizontal rib and the upper angles of the body are also marked by ribs. The edge is splayed.
3. Thames at London.
Ash 1955.199.
Fig. 51, 13.
Looped with oval mouth, plain collar, concave sides with triangular facets on the faces, outlined by two pairs of curved ribs.

North-eastern France

4. Seine at Paris.
Briard and Verron 1976b, 34, fig.3.
Looped with oval mouth, concave with plain collar, concave sides.
5. Seine at Paris.
MAN 72. 236.
Looped with oval mouth, plain collar above two horizontal ribs, below these ribs is a central Y-rib flanked by two curved ribs on each side; a horizontal rib and an offset demarcate this upper part of the axe, which is straight-sided, from the blade, which is trapezoidal.

Belgium

6. Meuse at Liège, near the Episcopal Palace.
Dawans 1972, 319 no. 18, pl. IX, second left.
Looped with oval mouth and plain collar; trapezoidal blade with two spaced horizontal ribs and two vertical ribs.

Netherlands

7. Kalwijk (? Katwijk, S. Holland).
RMOL 1949/5.2.
Looped with concave mouth, plain collar and concave sides.

LIST 101. Socketed adzes.

England

1. Weeke, Hants.
Wheeler 1924, fig. a.
Shouldered.
2. Oxwick and Pattesley, Norfolk.
Norwich 1966, 23, fig. 50,
Indented.
3. Barrow Gurney, Somerset.
Grinsell 1953, fig. 1.
Shouldered.
4. Thames, ? at Thames Ditton, Surrey.
Wheeler 1924, fig. b.
Shouldered.

North-eastern France

5. Pontpoint hoard, Oise (137).
Shouldered

LIST 102. Double-T-hilted knives.

Netherlands

1. Valthe, Drenthe.
Butler 1973a, fig. 6.

2. Appelscha, Friesland.
Ibid., fig. 5.
3. Hardenburg, Overijssel.
Ibid., fig. 4.
4. Vroomshoop, Overijssel.
Ibid., fig. 7.

LIST 103. Plain spearheads. MAP 40.

North-eastern France

1. Boutigny hoard I, Essonne (132).
2. Boutigny hoard II, Essonne (133).
Several examples.
3. Essonne.
J.-P. Mohen.
Several examples.
4. Combon hoard, Eure (164).
Two complete examples and four fragments.
5. Forest of Compiègne, Oise.
J. -Cl. Blanchet.
Six examples.
6. Pontpoint hoard, Oise (137).
Two examples.
7. Oppidum du Tremblay, Verneuil-en-Halatte, Oise.
Blanchet and Lambot 1975, 63-64 nos. 70-71.
Two examples.
8. Seine at Paris hoard (138).
At least eleven examples.
9. Seine at Paris.
Mohen 1968, 801, B78b, pl. X.
Fragmentary.
10. Seine at Paris.
Ibid., 802, B79a-d.
Four examples.
11. Seine at Pont Saint-Michel, Paris.
Ibid., 802, B78c, pl. X.
12. Canteleu hoard, Seine-Maritime (139).
Three fragments.
13. Luzarches hoard, Val-d'Oise (141).
Five fragments

Belgium

14. Pulle, Antwerp (142).
Eight examples.
15. Mendonk, Ghent, E. Flanders.
Mariën 1952, afb. 254, 2; Desittere 1974b, 145 no. 8, fig. 3.
? Two separate examples.
16. Ledeberg, E. Flanders.
Desittere 1975, 119 no. 36, fig. 2.

Netherlands

17. Brammershoopveen, Odoorn, Drenthe.
Jacob-Friesen 1967, 275, 379 no. 1717, Taf. 179, 10.
18. Nieuw-Weerdinge, Drenthe.
Ibid., 379 no. 1721, Taf. 95, 14.

LIST 104. Decorated spearheads. MAP 40.

North-eastern France

1. Marne at Brasles, Aisne.
Lebel 1953, 353, fig. 82; Jacob-Friesen 1967, 376 no. 1664, Taf. 167, 3-4; Tackenberg 1971, 75 n. 233.
Thirty examples, including ten with semicircular motifs.
2. Marne at Chezy-sur-Marne, Aisne.
Chevallier 1959, fig. 57, right.
Fillet-defined midribs with line and ring ornament; socket ornamented with bands of lines, hatched triangles and ring-and-dot motifs.
3. Combon hoard, Eure (164).
Socket fragment with triangular motifs.
4. Eure.
Jacob-Friesen 1967, 367 no. 1672, Taf. 167, 11.
Long socket with transverse bands and curvilinear motifs; swag and cordiform motifs on the blade.
5. Ressons-sur-Matz, Oise.
Ibid., 376 no. 1662, Taf. 167, 6.
Transverse bands and curvilinear motifs on the socket.
6. Seine, Seine-et-Oise.
De Mortillet 1903, pl. LXXXVIII, 1095.
Long socket with hatched triangles, bands of lines flanked by dots, bands of inverted V-motifs flanked by dots.
7. Amiens area, Somme.
Breuil 1903, fig. 4, 25; Jacob-Friesen 1967, 387 no. 1867;
Gaucher and Mohen 1974, 108, Amiens environs 6.
Bands of lines flanked by semicircular motifs.

Belgium

8. Dendermonde, E. Flanders.
Museum Vleeshuis, Antwerp 3537.
Angular faceted socket with hatched triangles flanking socket on blade.
9. Schoonaarde, E. Flanders.
Museum Vleeshuis, Antwerp 2228.
Angular faceted socket with hatched triangles at the blade edges.

Netherlands

10. Boerakker, Marum, Groningen.
Jacob-Friesen 1967, 267, 380 no. 1736, Taf. 159, 5; Tackenberg 1971, 75, 81, Liste 43, 3.
Ribbed and incised ornament on the mouth with pointillé to the base of the blade.

LIST 105. Saxo-Thuringian and related spearheads. MAP 40.

Netherlands

1. Erica, Drenthe.
Jacob-Friesen 1967, 249, 379 no. 1719, Taf. 132, 8; Tackenberg 1971, 67, Liste 41b, 4.
2. Weerdinger Veen, Drenthe.
Jacob-Friesen 1967, 249, 379, no. 1724, Taf. 132, 7; Tackenberg 1971, 67, Liste 41d, 4.
3. Huinen, Gelderland.
Jacob-Friesen 1967, 237, 379 no. 1730, Taf. 127, 10.
4. Nijmegen, Gelderland.
Ibid., 237, 380 no. 1731, Taf. 127, 7.
5. Stokkum, Overijssel.
Ibid., 237, 380 no. 1744, Taf. 127, 8.

LIST 106. Spearheads with perforated blades. MAP 40.

North-eastern France

1. Seine at Pont d'Austerlitz, Paris.
Briard 1963, 576 no. 13; Jacob-Friesen 1967, 212. 377 nos. 1678-9; Duval 1961, 49-50, fig. 23.
Musée Carnavalet, Paris PR 206.
Fig. 54, 3, after a drawing provided by N. Freidin.
Two examples, both with solid blade, concave lozenge section perforated by holes and a longitudinal slot on either side of the central ridge; angular socket.
2. Nampont, Somme.
Gaucher and Mohen 1974, 117, Nampont, ill. 28d. Briard 1963, 576 no. 1 and Jacob-Friesen 1967, 375 no. 1648 both refer to this spearhead as from the Abbeville area.
Lunate opening.

LIST 107. Tubular ferrules. MAP 41.

North-eastern France

1. Marne at Brasles, Aisne.
Lebel 1953, 353.
"Très legerement troconique", presumably LBA2.
2. Boutigny hoard II, Essonne (133).
3. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, fig. 77.
4. Combou hoard, Eure (164).
Two examples.
5. Seine at Paris hoard (138).
Five fragments.
6. Seine at Paris.
De Mortillet 1903, pl. LXXXVIII, 1104.
7. Caix hoard, Somme (140).
Three complete examples and one fragment.

Belgium

8. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere 1976, 81, 90, fig. 5, 3-4; Desittere and Weissenborn 1977,
35 nos. 47-48, fig. 22.
Three examples.

Netherlands

9. ? Bruggelen, Apeldoorn, Gelderland.
Elzinga 1957-58, 16, 23, afb. 3, 5; Butler 1963a, 134-135.
Base broken off.

LIST 108. Locras swords. MAP 42.

North-eastern France

1. ? Sacy-le-Grand, Oise.
Coutil 1928, pl. IX, 8; Cowen 1955, 141-142; Schauer 1971, 177
n.3; Gaucher and Mohen 531 n. 5.
Hilt fragments.

Netherlands

2. Meuse at Maastricht, Limburg.
Sprenger 1948, 21, pl. IV, afb. 10, below; Cowen 1955, 142 no. 6;
Schauer 1971, 178 n. 5.
Variant.

LIST 109. Mainz swords. MAP 42.

North-eastern France

1. Precy-sur-Oise, Oise.
J.-Cl. Blanchet.
Mould of a sword related to the Mainz and Forel types.

LIST 110. Klentnice swords. MAP 42.

North-eastern France

1. Marne at Brasles, Aisne.
Lebel 1953, 353, fig. 82; Müller-Karpe 1961, 53 no. 12; Schauer 1971, 174 n. 1.
Three pommels.

LIST 111. Atlantic leaf-shaped swords. MAP 43.

North-eastern France.

1. Aisne at Pont de Pasly, Aisne.
Blanchet 1973, 52-54, fig. 7.
Midrib, quadruple outlines, ricasso, slightly convex shoulders, slotted hilt.
2. Saint-Simon, Aisne.
MAN 65.812.
J. D. Cowen.
3. Vendeuil, Aisne.
Lobjois 1976, 148-149, fig. 44, 1.
Straight shoulders with four rivet-holes, three rivet-holes in grip.
4. Musée de Laon, Aisne.
N. Freidin.
Two blade fragments. Not mapped.
5. Boutigny hoard II, Essonne (133).
One hilt fragment and various blade fragments.
6. Champcueil hoard, Essonne (134).
One hilt fragment and one blade fragment.
7. Corbeil, Essonne.
J.-P. Mohen.
Saint-Nazaire sword.
8. Essonne.
J.-P. Mohen.
Five examples.
9. Essonne.
J-P. Mohen.
Five short swords.

10. Essonne.
J.-P. Mohen.
Saint-Nazaire sword.
11. Combon hoard, Eure (164).
Three hilts, various blade fragments.
12. Seine at Les Andelys, Eure.
Coutil 1928, pl. IX³.
Broken blade with single outlines, ricasso, convex shoulders with four rivet-holes, three rivet-holes in grip.
13. Louviers, Eure.
Ibid., pl. IX³.
Broken hilt with convex shoulders containing four rivet-holes, remains of one rivet-hole in broken grip.
14. Seine at Pont de l'Arche, Eure.
Ibid., pl. VII, 20.
Ricasso, convex shoulders, three slots.
15. Seine at Pont de l'Arche, Eure.
Ibid., pl. VII, 21.
Midrib, slightly convex shoulders with four rivet-holes, slotted grip.
16. Pressagny-l'Orgueilleux, Eure.
Ibid., pl. VIII, 14.
Midrib, deep angular ricasso, convex shoulders with four rivet-holes, three rivet-holes in grip.
Saint-Nazaire.
17. Seine at Vernon, Eure,
Ibid., pl. IX³.
Single outlines, ricasso, four rivet-holes in shoulders, three in grip.
18. Vezillon, Eure.
Ibid., pl. VII, 23.
Convex shoulders with four rivet-holes, slotted grip.
19. Fort-Harrouard hoard, Eure-et-Loir (136).
One hilt with four rivet-holes in the shoulders, nine blade fragments.
20. Clichy, Hauts-de-Seine.
J.-P. Mohen.
Short sword.
21. Nanterre, Hauts-de-Seine.
Nicolas 1976.
Convex shoulders with four rivet-holes, three rivet-holes in grip.
22. Lille Museum, Nord.
Mohen 1972, 452; Gaucher and Mohen 1974, 116, Lille 11.
Blade fragment, not mapped.
23. Oise nr. Ile du Grand Peuple, Armancourt, Oise.
Blanchet and Lambot 1975, 39 no. 20.
Blade fragment.

24. Beauvais, Oise.
Coutil 1928, pl. VII, 24.
Convex shoulders with four rivet-holes, slotted grip.
25. Aisne at Compiègne, Oise.
Blanchet 1973, 54 no. 2.
26. Compiègne, Oise.
Ibid., 54 no. 3.
27. Compiègne, Oise.
Blanchet and Lambot 1975, 39 no. 21.
28. Mont Ganelon, Clairoix, Oise.
Ibid., 39-40 no. 22.
Midrib, single outlines, straight shoulders, slotted grip.
29. Pontpoint hoard, Oise (138).
One hilt fragment.
30. Saint-Pierre, Pontpoint, Oise.
Blanchet 1973, 54 no. 4.
31. Oise above Saint-Leu-d'Esserent, Oise.
Ibid., 54 no. 5.
32. Saint-Simon, Oise.
Coutil 1928, pl. VII, 24.
Broad convex shoulders with four rivet-holes, slotted grip.
Not mapped.
33. Seine at Paris hoard (138).
Seven hilt fragments, six point fragments, eleven blade fragments.
Two hilts have rivet holes, two have slots.
34. Seine at Paris.
Coutil 1928, pl. VII, 26.
Convex shoulders with four rivet-holes, slotted grip.
35. Seine at Paris.
Ash 1927.2233.
Fig. 52, 2.
Broad midrib, convex shoulders with four rivet-holes, rivet holes in grip.
36. Seine at Paris.
Ash 1927.2234.
Fig. 52, 3.
Oval blade section, ricasso, convex shoulders with four rivet-holes, three rivet-holes in grip.
37. Seine at Paris.
Ash 1927.2235.
Fig. 52, 4.
Broad midrib, single outlines, convex shoulders with four rivet-holes, rivet-hole in grip.

38. Seine at Paris.
Ash 1384.1888.
Fig. 52, 5.
Broad midrib, slightly convex shoulders with four rivet-holes.
39. Seine at Paris.
Ash 1927.2236.
Fig. 53, 1.
Broad midrib, single outlines, straight shoulders with four rivet-holes, slotted grip.
40. Seine at Paris.
Musée Départemental des Antiquités de la Seine-Maritime, Rouen, 584.
Verron 1971 no. 75; Burgess 1968a, fig. 9, 4.
Fig. 53, 2.
Oval blade section, straight shoulders, three slots.
41. Seine at Paris.
Mohen 1968, 798, B67, pls. IX, X, XI.
Broad midrib, double outlines, ricasso, straight shoulders with four rivet-holes, remains of rivet-hole in broken grip.
42. Seine at Paris.
Ibid., 798-800, B68, pls. IX, X, XI.
Broad midrib, ricasso, slightly convex shoulders with four rivet-holes.
43. Seine at Paris.
Ibid., 800-801, B69, pls. X, XI.
Narrow midrib, single outlines, ricasso, slightly convex shoulders with four rivet-holes.
44. ? Fampoux, Pas-de-Calais.
Mohen 1972, 452; Gaucher and Mohen 1974, 114, Fampoux 5.
45. Dieppe, Seine-Maritime.
Cowen 1956, 641; Verron 1976a, fig. 3, 20.
Saint-Nazaire sword, possibly associated with a lozenge-section chape (List 112, 11).
46. Seine between Freneuse and Oissel, Seine-Maritime.
Verron 1971, 55 no. 21.
Single outlines, straight shoulders with four rivet-holes, three rivet-holes in grip.
47. Mautort, Abbeville, Somme.
Gaucher and Mohen 1974, 82, 104, Abbeville 6, ill. 51.
Slotted grip, straight shoulders with slots. Found with a broad-mouthed beaker (ibid., ill. 50); the find is interpreted as a burial of Bronze Final III (ibid., 123).
48. Albert, Somme.
Ash 1927.2239.
Ibid., 106, Albert 2.
Fig. 53, 3.
Oval blade section, irregular shoulders with four rivet-holes slotted grip.

49. Amiens, Somme.
Ibid., 107, Amiens 23, ill. 35.
Triple outlines with pointillé, ricasso, straight shoulders with four rivet-holes, three rivet-holes in grip. Narrow blade suggests that this sword belongs to the Saint-Nazaire type.
50. Amiens, Somme.
Ibid., 109. Amiens, Longueau Montieres 4; Breuil 1900, fig. 4, 28.
Multiple outlines, straight shoulders with four rivet-holes, three rivet-holes in grip.
51. Amiens, Somme.
Gaucher and Mohen 1974, 109, Amiens, Longueau Montières 6;
Breuil 1900, fig. 4, 29.
Multiple outlines, straight shoulders with four rivet-holes.
52. Caix hoard, Somme (140).
Two hilt fragments, one grip with three rivet-holes, one with straight shoulders, four rivet-holes and slotted grip.
53. Liercourt, Somme.
Musée Boucher de Perthes, Abbeville.
Gaucher and Mohen 1974, 115, Liercourt 1; Breuil 1900, fig. 4, 27;
Burgess 1968a, fig. 1, 6.
Fig. 53, 4.
Broad midrib, single outlines, convex shoulders with four rivet-holes.
54. Seine at Charenton, Val-de-Marne.
BM 90.11-13, 5-6.
Fig. 52, 6-7.
Fragments of two swords with convex shoulders and four rivet-holes, one has a slotted grip.
55. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
MAN 26.003.
J. D. Cowen.
56. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
MAN 26.004.
J. D. Cowen.
57. Seine between Argenteuil and Epinay, Val-d'Oise.
Fallue 1862, 375, pl. IX, 1.
Slotted grip.
58. Seine at Mantes-la-Jolie, Yvelines.
Gaucher and Mohen 1972, 55, fig. 1.
Slightly convex shoulders with four rivet-holes, three rivet-holes in grip.
59. Seine at Poissy, Yvelines.
Coutil 1928, pl. VIII, 8.
Midrib, three slots.
60. Seine between Triel-sur-Seine and Vaux-sur-Seine, Yvelines.
MAN 26.004.
J. D. Cowen.

Belgium

61. Mechelen, Antwerp.
Desittere 1976, 90, fig. 5, 1.
Lozenge blade section with multiple outlines, straight shoulders with four rivet-holes, three rivet-holes in grip.
62. Mechelen, Antwerp.
Ibid., 90, fig. 5, 2.
Lozenge blade section with quadruple outlines.
63. Pulle, Antwerp (142).
Fragments of five sword blades with midribs and multiple outlines.
64. Scheldt at Melle, E. Flanders.
Cowen 1952, 146 no. 6; Desittere 1976, 90, fig. 5, 5.
Broad midrib, straight shoulders with four rivet-holes, three rivet-holes in grip. Narrow blade suggests that this sword belongs to the Saint-Nazaire type.
- The following Belgian swords in the Museum Vleeshuis, Antwerp, are not listed by Desittere (1976, 90) and are not mapped here.
65. Geraardsbergen, E. Flanders.
2232.
Three slots.
66. Schoonaarde, E. Flanders.
1356.
Blade.
67. Scheldt at Schoonaarde, E. Flanders.
2247.
Slotted grip.
68. Zele, E. Flanders.
2246.
Slotted grip.

Netherlands

69. Meuse at Cuyk, N. Brabant.
RMOL k 1950/7.1.
Desittere 1976, 90.
Four rivet-holes in shoulders, slotted grip.
70. 'N. Brabant'.
Cowen 1952, 144 no. 1, pl. XV, 2.
Midrib, single outlines, slightly convex shoulders with four rivet-holes, slotted grip. Not mapped.
71. 'N. Brabant'.
Sprockhoff 1931, Taf. 7, 7; Cowen 1952, 144 no. 3.
Midrib, single outlines, straight shoulders with four rivet-holes, three rivet-holes in convex grip. Not mapped.

72. Millingen, Gelderland.
Desittere 1976, 90, gives the accession number RMOL e 1936/12.2;
I noted a sword RMOL 1 1936/12.2 with the provenance, 'Venlo area,
Limburg', four rivet-holes in shoulders, slotted grip. Perhaps
Desittere is referring to this sword.
Not mapped.

LIST 112. Lozenge-section chapes. MAP 44.

North-eastern France

1. Buey, Aisne.
Briard 1965, 193.
Provenance uncertain, not mapped.
2. Boutigny hoard II, Essonne (133).
Two examples.
3. Seine between Morsang and Saintry, Essonne.
Toulouse 1891, fig. 53.
4. Essonne.
J.-P. Mohen.
Three examples.
5. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 28, 7.
6. Mont Ganelon, Clairoix, Oise.
De Mortillet 1905, pl. LXXXVII, 1076; Briard 1965, 193.
Two examples.
7. Pontpoint hoard, Oise (137).
Two examples.
8. Seine at Paris.
Mohen 1968, 801, B73, pls. X, XI.
Several other examples are known from the Paris region.
9. Nr. Paris.
Savory 1964-66, 184 n. 6.
Not mapped.
10. Canteleu hoard, Seine-Maritime (139).
Two examples.
11. Dieppe, Seine-Maritime.
Coutil 1921, pl. 5; Cowen 1956, 641.
Possibly associated with a Saint-Nazaire sword (List 111, 45).
12. Caix hoard, Somme (140).
Several examples.
13. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Briard 1965, 193.
14. Luzarches hoard, Val-d'Oise (141).
Ten fragments.

Belgium

15. Gentbrugge, E. Flanders.
Mariën 1945; Desittere 1975, 118-119 no. 34.
Zigzag ornament below mouth.

LIST 113. Flesh-hook terminals.

Britain.

1. Isleham hoard, Cambs. (127).
Eleven examples.
2. Wilburton hoard, Cambs. (129).
Three examples.

North-eastern France

3. Boutigny hoard II, Essonne (133).
Possible example.
4. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
De Mortillet 1903, pl. LXXXVII, 1079.

LIST 114. Phalerae.

Britain

1. Isleham hoard, Cambs. (127).
Eighteen complete or near-complete examples and thirty-seven fragments. Stepped.
2. Thames, Surrey side under Hammersmith Bridge.
O'Connor 1975, 219 no. 5, fig. 3, 5.
Stepped.

Belgium

3. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 52 nos. 95-96, figs. 54-55.
Two examples. Convex.

LIST 115. Disc-headed pins. MAP 45.

North-eastern France

1. Boutigny hoard I, Essonne (132).
Central knob, radiating ornament.
2. Caix hoard, Somme (140).
Central knob, circle of oblique lines on head, ribs on shaft.

LIST 116. Pins with decorated egg-shaped heads. MAP 45.

North-eastern France.

1. Saint-Pierre-en-Chastre, Oise.
Kimmig 1954, 225, fig. 101, 5; Kubach 1977, 499 n. 72.

Belgium

2. Han, Namur.
Mariën 1974, 227, fig. 3; Kubach 1977, 498 n. 55.
At least two examples.
3. Sinsin, Namur.
Raepsaet-Charlier 1971, 67-69, fig. 7, 5; Kubach 1977, 500 n. 81.

LIST 117. Kidney-shaped bracelets.

North-eastern France

1. Boutigny hoard II, Essonne (133).
Fragmentary, massive oval section with incised ornament, bands of oblique lines, concentric circles and pointillé.
2. Vezillon, Eure.
Eluere 1975, 28, fig. 2, 1.
Massive section with groups of transverse ribs and bands of incised lines; annular.
3. Fort-Harrouard hoard, Eure-et-Loir (136).
Round section, slender with three double ribs; annular.
4. Pontpoint hoard, Oise (137).
Four triple ribs; annular.

Belgium

5. Mont Falhize, Huy, Liège.
Dawans 1972, 324 no. 35, pl. XI, above.
Concavo-convex section with ribs and incised ornament, annular.

LIST 118. 'Bucket handles'.

Britain

1. Barrow, Suffolk.
Challis and Harding 1975, Part i, 27.
Possibly associated with a flange-hilted sword of Burgess' Group IIc.
2. Rotsea, Yorks.
Ibid., Part i, 27, Part ii, 12, fig. 21, 1.

LIST 119. Razors.

North-eastern France

1. Boutigny hoard II, Essonne (133).
Two examples.

Netherlands

2. Bargerroosterveld 1899 hoard (143).
Biconical openwork handle with ring terminal, worn blade.

3. Gasteren, Drenthe.
Van Giffen 1945, 105 no. 27d, 118 no. 94, aff. 15A, d; Butler 1963a, 117-118.
Biconvex handle with lateral projections, V-notch in blade.
From an inhumation in a wooden coffin below a rectangular mound.
4. Weerdinger Weg, Drenthe.
Butler 1960a, 108-109, fig. 51.
Biconical openwork handle with ring terminal and double V-groove at junction with blade which is rectangular with V-notch.

LIST 120. End-winged axes.

Only hoard finds and moulds are listed.

North-eastern France

1. La Justice hoard, Oise (168).
Two examples and two fragments.
2. Giraumont hoard, Oise (170).
Two fragments.
3. Saint-Pierre-en-Chastre, Oise (171).
J.-Cl. Blanchet.
Bronze mould fragment.
4. Déville hoard, Seine-Maritime (173).
5. Gonfreville-l'Orcher, Seine-Maritime.
Coutil 1921, 795, pls. 7, II.
Bronze mould, perhaps from a hoard.
6. Gravelle hoard, Seine-Maritime (174).
One example and two fragments.
7. Amiens, Somme.
Breuil 1902, fig. 1, 2; Gaucher and Mohen 1974, 69, 97, 106,
Amiens 9, ill. 56.
Bronze mould.
8. Plainseau hoard, Somme (178).
Six examples.
9. Marlers hoard, Somme (180).
Two examples.
10. Choisy-le-Roi hoard, Val-de-Marne (181).
11. Thiais hoard, Val-de-Marne (182).

Belgium

12. Petersheim hoard, Limburg (192).
13. Eprave hoard, Namur (193).

Netherlands

14. Berg-en-Terblijt hoard, Limburg (209).
Two examples, unlooped, perhaps LBA 2.

LIST 121. Winged Adzes. MAP 47.

England

1. Shoebury hoard, Essex (151).
Unlooped.
2. Shoebury/Great Wakering hoard.
Inv. Arch.GB38, 5.
Looped.
3. Swalecliffe hoard, Kent.
Brailsford 1953, 45.

North-eastern France

4. Abbeville area, Somme.
Breuil 1905, fig. 5, 58; Gaucher and Mohen 1974, 105, Abbeville
environs 11.
Looped.

LIST 122. South-eastern socketed axes with plastic wing ornament.
MAP 47.

England

1. Lodge Farm hoard, Pleshey, Essex.
Bradshaw and Coombs n.d., 7 n. 6.
2. High Roding hoard, Essex.
Evans 1881, 109, fig. 110.
3. Stourmouth hoard, Kent (157).
4. Wateringbury, Kent.
Bradshaw and Coombs n.d., 7, n.6.
5. Unthank Road hoard, Norwich, Norfolk.
Ibid.
6. Kensington hoard, London.
Inv. Arch. GB52, 2.

LIST 123. Socketed axes of south-eastern, Plainseau or Belgian type in
Belgium and the Netherlands. MAP 48.

Belgium

1. Antwerp, near the Zuiderkasteel.
Museum Vleeshuis, Antwerp 2315.
Desittere 1976, 91.
Ribbed wing ornament.
2. Antwerp.
MRAH Brussels.
Ribbed wing ornament demarcated by a rib below.

3. Hoogstraten hoard, Antwerp (185).
Twenty examples. some at least Belgian.
4. Mechelen, Antwerp.
MRAH Brussels.
Desittere 1976, 91.
Ribbed wing ornament demarcated by a rib below.
5. Turnhout, Antwerp.
MRAH Brussels.
Mariën 1952, afb. 200, 2; Desittere 1976, 91.
Ribbed wing ornament demarcated by a rib below.
6. Turnhout area, Antwerp.
MRAH Brussels.
Desittere 1976, 91.
Plain, probably south-eastern.
7. Brussels area, Brabant.
MRAH Brussels.
Mariën 1957, 35; Desittere 1976, 91.
Plain.
8. Dendermonde, E. Flanders.
Desittere 1976, 91, fig. 6, 2.
Ribbed wing and pellet ornament.
9. Dendermonde, E. Flanders.
MRAH Brussels.
Plain, probably south-eastern.
10. Dikkelvenne, E. Flanders.
Museum Vleeshuis, Antwerp 2313.
Plastic wing and pellet ornament.
11. Scheldt at Melsele, E. Flanders.
Desittere 1973b, fig. 2.
X-ornament, probably Plainseau.
12. Sint Armandsberg, Oostakker, E. Flanders.
University Museum, Ghent 1.320.
Desittere 1976, 92, fig. 6, 3.
Fig. 68, 5.
Plain, south-eastern.
13. Scheldt between Wichelen and Schellebelle, E. Flanders.
Ibid., 91, fig. 6, 1.
Plastic wing and pellet ornament.
14. Wichelen, E. Flanders.
Museum Vleeshuis, Antwerp 2336.
Pellet ornament, probably south-eastern.
15. Zandbergen hoard, E. Flanders (188).
One example, Belgian

16. Zele, E. Flanders.
Museum Vleeshuis, Antwerp 2323.
Plastic wing ornament.
17. Liège, Pont Maghin.
Dawans 1972, 318 no. 15, pl. IX, right.
Belgian.
18. Solières, Liège.
Ibid., no. 19, pl. VIII, right.
Ribbed wing ornament, probably Belgian.
19. Statte, Liège.
Ibid., 317 no. 13, pl. VIII, centre.
Plain, probably south-eastern.
20. Vottem, Liège.
Ibid., no. 17.
Ribbed wing ornament, probably south-eastern.
21. Beringen, Limburg.
Desittere 1976, 91.
Ribbed wing ornament.
22. Heppeneert, Limburg.
Butler 1963a, 85 nos. 9-10, pl. XII, 4-5; Desittere 1976, 91.
Two examples: one probably south-eastern.
23. Petersheim hoard, Limburg (192).
Four examples.
24. Trou Madame, Bouvignes-sur-Meuse, Dinant, Namur.
Musée Archéologique, Namur.
Plain.
25. Eprave hoard, Namur (193).
Three examples: two probably Belgian, one south-eastern.
26. Han, Namur (194).
Seventeen examples, probably Belgian.
27. Jambes, Namur.
Museum Vleeshuis, Antwerp 2326.
Plastic wing ornament.
28. Jemeppe hoard, Namur (195).
Four examples, probably Belgian.

Netherlands

29. Breda, N. Brabant.
Butler 1963a, 85 no. 14, fig. 22.
30. Helmond, N. Brabant.
Ibid., no. 18, pl. XII, 1.

31. Hilvarenbeek, N. Brabant.
BM 68.12.29.1.
Fig. 68, 6.
Deep ribbed wings, south-eastern cf. a fragment in the Aveley hoard,
Essex (Thurrock Local History Museum, Grays 968/17; Fig. 68, 7).
32. Rijsbergen, N. Brabant.
RMOLI 572 TR2.
Pellet ornament, south-eastern.
33. Rijsbergen, N. Brabant.
Butler 1963a, 85 n. 17.
? the same as no. 32.
34. Stiphout hoard, N. Brabant (197).
35. Bargeroosterveld, Drenthe.
Butler 1960a, 123 no. 3, fig. 54; 1963a, 85 no. 20.
Ribbed wing ornament demarcated by a rib below, probably south-eastern.
36. Nijmegen area, Gelderland.
Ibid., 85 no. 15.
Ribbed wing and pellet ornament.
37. Waal at Nijmegen, Gelderland.
Ibid., no. 16.
Pellet ornament on one face, V-ornament on the other.
38. ? Nijmegen, Gelderland.
Ibid., nos. 22-23, pl. XII, 2-3.
Two examples, one plain, the other with ribbed wing ornament, both
probably south-eastern.
39. Posterholt, Limburg.
Ibid., 85 no. 12.
40. Weert, Limburg.
Ibid., no. 11.
Plain.
41. Elzen, Overijssel.
Ibid., no. 19.
Pellet ornament.
42. R. Lek at Wijk bij Durstede, Utrecht.
RMOL f1951/8.1.
Double rib and pellet ornament.
Belgian.

LIST 124. Axes with vertical ribs in Belgium.

1. Hoogstraten, Antwerp.
Museum Vleeshuis, Antwerp 2322.
Fig. 68, 9.
Probably unlooped, five ribs terminating in pellets.

2. Ename, E. Flanders.
Desittere 1976, 91, fig. 6, 7.
University Museum, Ghent 321.
Fig. 68, 8.
Four ribs.
3. Wichelen, E. Flanders.
Ibid., 91, fig. 6, 5, 6, 8.
Three examples, two with five ribs terminating in pellets, one with four ribs.
4. Wichelen, E. Flanders.
Ibid., 91.

LIST 125. North Dutch axes in England. MAP 49.

1. Southchurch hoard, Essex (152).
Mouth fragment with multiple horizontal ribs.
2. Minnis Bay hoard, Kent (156).
Multiple horizontal ribs.

LIST 126. Lower Meuse axes. MAP 49.

Additions to Butler 1973b, Abb. 13.

Belgium

1. Pulle, Antwerp (142).
2. Sint-Katelijne-Waver, Antwerp.
Mariën 1952, afb. 200, 1.
3. Nieuwrode hoard, Brabant (186).
Perhaps as many as five examples.
4. Jambes, Namur.
Eloy 1972, 773, fig. 1, 2.
5. Samson, Thon, Namur.
Desittere 1974a, 113.
6. Scoville, Mohiville, Namur.
Musée Archéologique, Namur.
7. Prov. Namur.
MRAH Brussels.
Not mapped.

Netherlands

8. Nijmegen, Gelderland.
Ash 1927.1983.
Fig. 68, 10.

LIST 127. Faceted axes.

North-eastern France

1. Graville hoard, Seine-Maritime. (174).
Fragments of three examples.
2. Dreuil hoard, Somme (177).
3. Saint-Roch hoard, Somme (179).
4. Marlers hoard, Somme (180).

Belgium

5. Waasmunster, E. Flanders.
Museum Vleeshuis, Antwerp 2314.
Fig. 68, 13.

Netherlands

6. Havelte, Drenthe.
Butler 1961b, 203, figs. 11-12; 1963a, 86, pl. XII.
One valve of a bronze mould.

LIST 128. South Welsh socketed axes. MAP 50.

South-eastern England

1. Eaton Ford, Beds.
Fox 1926, 208, pl. II, 10.
2. Lulworth hoard, Dorset.
Drew 1935, pl. LXIX, 17.
3. Thurloe Walk hoard (149).
4. Bitterne hoard, Hants.
Darwin 1894-97, 65-66, pl. II, 5, 8.
Two examples.
5. Fordingbridge, Hants.
McNeil 1973, 63.
6. Colden Common hoard, Twyford, Hants.
Burgess 1976a, 71, fig. 4. 8, e.
Not mapped.
7. Portsmouth, Hants.
McNeil 1973, 63.
8. Bexley Heath hoard, Kent.
Inv. Arch. GB53, 38.
9. Minnis Bay hoard, Kent (156).
Two examples.
10. Lincolnshire.
Davey 1973, 74, fig. 11, 117.
Not mapped.

11. Reepham, Norfolk.
McNeil 1973, 63.
12. Petter's Sports Field, Egham, Surrey.
Johnson and Needham 1974; Johnson 1975, 12, fig. 2.
Fragmentary stone mould.
13. ? Seale, Surrey.
Johnson and Needham 1974.
Not mapped.
14. Bulford, Wilts.
Grinsell 1957, 52; Johnson and Needham 1974.
Stone mould.
15. Burderop Down, Wilts.
C. Gingell.
Stone mould.

North-eastern France

16. Gonfreville-l'Orcher hoard, Seine-Maritime.
Verron 1976a, fig. 4, 4.
17. Graville hoard, Seine-Maritime (174).
18. Plainseau hoard, Somme (178).

LIST 129. Nordic socketed axes.

England

1. Braintree, Essex.
O'Connor 1976 b.
Koppenow type.
2. Warminster, Wilts.
Butler 1963a, 94.
Facets on blade.

Ireland

3. ? North of Ireland.
Hodges 1954, 74, fig. 2, 6.
Facets on blade, cord moulding.
4. Unprovenanced.
Hodges 1956, 33.
Facets on blade.

Belgium

5. Ghent, E. Flanders.
Museum Vleeshuis, Antwerp 2316.
Fig. 68, 12.
Round mouth with triple ribs, long beaded wings.

Netherlands

6. Eibergen, Gelderland.
Butler 1963a, 94.
Facets on blade.

LIST 130. Socketed chisels.

North-eastern France

1. Villers-sur-Coudun, Oise.
Blanchet and Samadet 1975, 18, figs. 1-2.
2. Saint-Pierre-en-Port, Seine-Maritime.
Cayeux 1970, 122, fig. 1, left.
3. Choisy-le-Roi hoard, Val-de-Marne. (181).

Belgium

4. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 27-28 no. 30, fig. 12.

Netherlands

5. Deurne hoard, N. Brabant (196).
6. Berg-en-Terblijt hoard, Limburg (209).

LIST 131. Tanged leather-working knives. MAP 51.

Partly after Roth 1974, 45-47.

England

1. Wallingford hoard, Berks.
Roth II, 18.
2. Bank of the Thames at Wallingford, Berks.
Collins 1948-49.
3. Yattendon hoard, Berks.
Roth II, 21.
4. Princes Risborough, Bucks.
Ibid., II, 11.
5. Reach Fen hoard, Cambs.
Ibid., II, 12.
6. West Kirby, Cheshire.
Ibid., II, 19.
7. Biggin Grange, Hartington Nether Quarter, Derbys.
Ibid., II, 1.
8. Mount Batten, Plymouth, Devon.
Ibid., III, 4; Clarke 1971, 143, fig. 2, 6.
9. Eldon's Seat, Encombe, Dorset.
Roth II, 5.

10. Grays Thurrock hoard, Essex (148).
Ibid., U.S., 2.
Two fragments.
11. Colchester Museum.
Ibid., II, 3.
12. Letchworth, Herts.
Ibid., II, 8.
13. Broadness hoard, Kent.
Ibid., II, 2.
14. Canterbury, Kent.
Ibid., III, 1.
15. Stourmouth hoard, Kent (157).
Two examples.
16. Crawley, Lancs.
Ibid., II, 4.
Provenance uncertain.
17. Northumberland Alley, Fenchurch Street, City of London.
Ibid., II, 10.
18. Thames at Old England, Brentford, Middlesex.
Wheeler 1929, pl. I, fig. 1, 6.
19. Thames.
Roth II, 17; Brailsford 1953, 30, fig. 11, 1.
Two examples.
20. Carleton Rode hoard, Norfolk.
Norwich 1966, pl. VII, 15.
21. Gorleston hoard, Norfolk.
Ibid., 27.
22. Eaton hoard, Norwich, Norfolk.
Ibid., 28, figs. 83-84.
Two examples.
23. Norfolk.
Ibid., 23.
24. Broadward hoard, Salop.
Roth U.S., 1.
25. Porkington, Salop.
Ibid., U. S., 3.
26. Ham Hill, Somerset.
Ibid., II, 6.
27. Court Hill, Tickenham, Somerset.
Green 1973, 41, fig. 6.

28. Caveham, Suffolk.
Roth III, 2.
29. Levington hoard, Suffolk.
Ibid., II, 9.
30. Mildenhall, Suffolk.
Ibid., III, 3.
31. High Down, Sussex.
Ibid., II, 7; Wilson n.d., pl.6a.
Two examples.
32. Oldbury Hill, Calne, Wilts.
Annable and Simpson 1964, 71 no. 628.
33. Coleman's Bottom, East Kennet, Wilts.
Ibid., 70 no. 612.
34. Scarborough, Yorks.
Roth II, 13.
35. Staple Howe, Yorks.
Ibid., II, 14.
36. Thixendale, Yorks.
Ibid., II, 15.
37. Westow, Yorks.
Ibid., II, 20.
Two examples.

North-eastern France

38. Juvincourt hoard, Aisne (163).
Ibid., II, 5.
39. Dreuil hoard, Somme (177).
Ibid., II, 3.
40. Marlers hoard, Somme (108).
Ibid., II, 4.

LIST 132. Socketed gouges.

North-eastern France

1. Juvincourt hoard, Aisne (163).
2. Giraumont hoard, Oise (170).
3. Saint-Pierre-en-Chastre, Oise (171).
4. Seine at Paris.
Ash 1927.2203.
5. Déville hoard, Seine-Maritime (173).
6. Gravelle hoard, Seine-Maritime (174).

7. Torcy, Seine-Maritime.
Cabrol 1937, 371, fig. 2.
8. Dreuil hoard, Somme (177).
9. Plainseau hoard, Somme (178).
Two examples.
10. Saint-Roch hoard, Somme (179).
Two examples.
11. Marlers hoard, Somme (180).

Belgium

12. Scheldt at Wichelen, E. Flanders.
MRAH Brussels.

Netherlands

13. Deurne hoard, N. Brabant (196).
14. Stiphout hoard, N. Brabant (197).
15. Waal at Rossum, Gelderland.
Butler 1963a, 126 no. 3.

LIST 133. Socketed hammers.

North-eastern France

1. Juvincourt hoard, Aisne (163).
2. Beaudreville, Limours, Essonne.
Ash 1927, 2202.
Fig. 69, 1.
3. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 28, 1-3.
Three examples.
4. Plainseau hoard, Somme (178).
5. Marlers hoard, Somme (180).
6. Thiais hoard, Val-de-Marne (182).

Belgium

7. Namur (? Prov. Namur).
Musée Archéologique, Namur.

LIST 134. Anvils.

England

1. West Row, Suffolk.
Trump 1968, 213.
T-shaped.

Scotland

2. Kyle of Oykel, Sutherland.
Smith 1881-82, 22-25; Coles 1963-64, 147.
Conical body with expanded oval top; raised face on one side bearing transverse grooves, broken tenon on opposite side.

Ireland

3. Lusmagh hoard, Co. Offaly.
Brailsford 1953, 34, fig. 12, 6; Eogan 1964, 345 no. 60.
T-shaped.
4. Bog of Cullen, Co. Tipperary.
Eogan 1964, 347 no. 69.

North-eastern France

5. Seine between Corbeil and Villeneuve-Saint-Georges, Essonne.
De Beauchêne 1961, 58-60, fig. 2a; Nicolardot and Gaucher 1975, 26.
Truncated conical body with a raised face and a conical tenon; the narrow end of the body can also serve as a tenon.
6. Pontpoint, Oise.
Nicolardot and Gaucher 1975, 22, fig. 6.
Reused casting jet.
7. Seine at Pont du Flandres, Paris.
Ibid., 21, fig. 1.
Rectangular face and conical beak set on square-section shaft divided by collar from pointed tenon.
8. Seine near Bardouville, Seine-Maritime.
Ibid., 29, fig. 2.
Conical body with transverse grooves, the broad end expanded to a square face; conical tenon with transverse grooves; the pointed end of the body also served as a tenon.
9. Déville hoard, Seine-Maritime (173).
Truncated conical body with longitudinal facets; small tenon below.
10. Graville hoard, Seine-Maritime (174).
Oval face set asymmetrically on a conical tenon.
11. Plainseau hoard, Somme (178).
Rectangular face set asymmetrically on a conical tenon.

LIST 135. Saws.

England

1. Lanherne hoard, Mawgan in Pydar, Cornwall.
Hencken 1932, 89, fig. 24, D.
2. Grimes Graves, Norfolk.
Smith 1920, 57-58.

3. Felixstowe hoard, Suffolk.
Inv. Arch. GB16, 1.

Wales

4. Monkton hoard, Pembroke.
Grimes 1951, fig. 64.

Ireland

5. Bishopsland hoard, Co. Kildare.
Eogan 1964, 276, fig. 5, 15.

North-eastern France

6. Marlers hoard, Somme (180).

Belgium

7. Han, Namur (194).

LIST 136. Sickles. MAP 52.

England

1. Thames near Bray, Berks.
Brailsford 1953, 30, fig. 11, 15; Fox 1941, 157 no. 2.
Tanged.
2. Little Baddow hoard, Essex.
Fox 1941, 158 no. 9, pl. II, 9.
Minnis Bay.
3. Grays Thurrock hoard, Essex (148).
Two fragments Minnis Bay (12-13), one fragment possibly from a tanged sickle (14).
4. Leigh hoard, Essex (150).
One fragment possibly Minnis Bay.
5. Dartford hoard, Kent.
Brailsford 1947, fig. 1, 1.
Minnis Bay.
6. Faversham, Kent.
Willett 1954, fig. 1, top.
Tanged.
7. Marden hoard, Kent.
Poste 1858, pl. 13, 1.
Minnis Bay.
8. Minnis Bay hoard, Kent (156).
Two Minnis Bay sickles.
9. Minster hoard, Kent.
Smith 1920, pl. III, upper right.
Fragment possibly from a tanged sickle.

10. Great St. Thomas Apostle hoard, City of London.
Monckton 1933, fig. e.
Minnis Bay.
11. ? Thames at or near Brentford, Middlesex.
Fox 1941, 160 nos. 17-18.
Two examples, tanged.
12. ? Thames between Wandsworth and Twickenham, Middlesex.
Ibid., 159 no. 15, fig. 2, 15.
Fig. 69, 2.
Minnis Bay.

North-eastern France

13. Deville hoard, Seine-Maritime (173).
Three examples, tanged.
14. Plainseau hoard, Somme (178).
Two examples, tanged. Also a ring-socketed sickle (List 54, 11).
15. Marlers hoard, Somme (180).
Two fragments, one probably tanged, one probably Minnis Bay.
16. Mont-Saint-Quentin, Somme.
Breuil 1901, fig. 4, 33; Gaucher and Mohen 1974, 117, Mont-Saint-Quentin.
Knobbed.

Belgium

17. Ny, Soy, Luxembourg.
Mariën 1952, afb. 249, 1.
Knobbed.
18. Grands Malades, Namur.
Ibid., afb. 249, 2.
Knobbed.
19. Han, Namur.
Mariën and Vanhaecke 1965, pl. 3.
Tanged.

Netherlands

20. Heiloo hoard, N. Holland (208).
One bronze, four flint.
21. Berg-en-Terblijt hoard, Limburg (209).
Three examples, knobbed.

LIST 137. Double-edged socketed knives. MAP 53.

North-eastern France

1. Juvincourt hoard, Aisne (163).
Three examples.

2. Seine at Paris.
Ash 1927.2205.
Fig. 69, 3.
3. Seine at Paris.
De Mortillet 1903, pl. LXXXV, 1045.
4. Graville hoard, Seine-Maritime (174).
5. Amiens, Somme.
CMAE FB 186.
Fig. 69, 4.
6. Dreuil hoard, Somme (177).
Two fragments.
7. Plainseau hoard, Somme (178).
8. Marlers hoard, Somme (180).
9. Choisy-le-Roi hoard, Val-de-Marne (181).
10. Seine at Charenton, Val-de-Marne.
Ash 1927.2042.
Fig. 69, 5.

LIST 138. Double-edged tanged knives.

North-eastern France

1. Saint-Pierre-en-Chastre, Oise (171).
Four examples, including one ribbed, one flanged and one riveted tang.
2. Déville hoard, Seine-Maritime (173).
Riveted.
3. Dreuil hoard, Somme (177).
Two examples, one riveted, one ribbed
4. Plainseau hoard, Somme (178).
Two examples.
5. Marlers hoard, Somme (180).
Riveted.

Belgium

6. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 38 no. 54, fig. 28.
Plain tang.
7. Ghlin, Hainaut.
Desittere 1976, 90, fig. 6, 4.
Riveted.
8. Ciney, Namur.
Desittere and Weissenborn 1977, 37 n. 27.
Plain tang.
9. Han, Namur (194).

LIST 139. Carp's Tongue knives. MAP 54.

England

1. Meldreth hoard, Cambs.
Inv. Arch. GB13, 13.
Convex back.
2. Bromley hoard, Essex.
Read 1901-03, 15.
Probably hog's-back.
3. Leigh hoard, Essex (150).
Three examples, hog's-back.
4. Home Wood Farm hoard, Allhallows, Hoo, Kent.
Wickham 1877, pl. C, 14.
Hog's-back.
5. Minnis Bay hoard, Kent (156).
Hog's-back.
6. Minster hoard, Kent.
Smith 1920, pl. III.
Hog's-back.
7. Stourmouth hoard, Kent (157).
Hog's-back.
8. Eaton hoard, Norwich, Norfolk.
Norwich 1966, 28, fig. 86.
Triangular.

North-eastern France

9. Plainseau hoard, Somme (178).
Concavo-convex.
10. Bonneville hoard, Yvelines (183).
Hog's-back.

LIST 140. Single -edged tanged knives. MAP 55.

England

1. Grays Thurrock hoard, Essex (148).
Fragment, straight back, undecorated.

North-eastern France

2. Dreslincourt, Oise.
BM WG 130.
Fig. 69, 6.
Single rib on tang, straight back, undecorated.
3. Giraumont hoard, Oise (170).
4. Saint-Pierre-en-Chastre, Oise (171).
Three examples, two with curved back and semi-circular ornament,
one with straight back.

5. Lyzel hoard, Pas-de-Calais (172).
Broad tang, concave back.
6. Choisy-le-Roi hoard, Val-de-Marne (181).

Belgium

7. Lommel, Limburg.
MRAH Brussels.
Stop on tang, straight back.
8. ? Prov. Limburg.
Desittere and Weissenborn 1977, 38-39, no. 55, fig. 29.
Stop and ribs on tang.
9. Han, Namur (194).
Several examples, including one with decorated curved back.
10. Mohiville, Namur.
Mariën 1952, 269, abb. 252.
Curved back and semi-circular ornament.
11. Trou del Leuve, Sinsin, Namur.
Raepsaet-Charlier 1971, 28-35, fig. 4.
Two examples, one with curved back and decoration on back and blade,
one with straight back.
12. Prov. Namur.
Cast in University Museum, Ghent.
Fig. 69, 7.
Straight back with semi-circular ornament.

LIST 141. Single-edged socketed knives. MAP 55.

England

1. Thames at London.
Jockenhövel and Smolla 1975, 306 n. 104.
2. Ham Hill, Somerset.
Ibid.

North-eastern France

3. Juvincourt hoard, Aisne (163).
4. Seine at Pas-de-Grigny, Essonne.
Nicolardot and Gaucher 1975, 65, fig. 1.
5. Plainseau hoard, Somme (178).
6. Choisy-le-Roi hoard, Val-de-Marne (181).
7. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
De Mortillet 1903, pl. LXXXIV, 1017.

LIST 142. Single-edged solid-hilted knives. MAP 55.

1. Juvincourt hoard, Aisne (163).
2. Dreuil hoard, Somme (177).

LIST 143. Cast perforated discs.

The dimensions are maximum external and minimum internal diameter.

England

1. Yattendon hoard, Berks.
Burgess, Coombs and Davies 1972, fig. 16, 30.
6.2 cm, 1.8 cm.
2. Isle of Harty hoard, Kent.
Inv. Arch. GB18, 7.
6.4 cm, 1.8 cm.
3. Minster hoard, Kent.
Smith 1920, pl. III.
4. Hayne Hill hoard, Saltwood, Kent.
Waller 1873, fig. 3; not traced by Osborne (1939, 204).
5. Heathrow, Middlesex.
Museum of London 74.284.
Fig. 69, 8.
5.7 cm, 1.5 cm.
6. Eaton hoard, Norwich Norfolk.
Norwich 1966, 28, fig. 77.
6.5 cm, 2.0 cm.

North-eastern France

7. Caix hoard, Somme (140).
5.4 cm, 1.8 cm.

Belgium

8. Port-Arthur hoard, E. Flanders (187).
7.1 cm, 1.5 cm.

LIST 144. Fish-hooks.

England

1. Thames at Barnes, Middlesex.
Museum of London A.17499.
Fig. 69, 9.
2. ? Thames.
Museum of London O.1248.

Scotland

3. Glenluce, Wigtownshire.
Anderson 1886, 202, fig. 219.

Ireland

4. 'Ireland'.
Evans 1881, 192, fig. 230.

North-eastern France

5. Vendeuil, Aisne.
Lobjois 1976, 146, fig. 44, 3.
6. Seine at Pas-de-Grigny, Essonne.
Duval 1961, 45.
7. Seine between Morsang and Saintry, Essonne.
Toulouze 1891, fig. 48.
8. Essonne.
J.-P. Mohen.
Three examples.
9. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 40.
10. Saint-Pierre-en-Chastre, Oise (171).

Belgium

11. Wichelen, E. Flanders.
Cast in University Museum, Ghent.
Fig. 69, 10.
Perhaps one of the examples in the next entry.
12. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 44-48 nos. 66-88, figs. 34-47.
Twenty-three examples.
13. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 4.
Several examples.

LIST 145. Large spearheads.

England

1. Thames at Isleworth, Middlesex.
Greenwell and Brewis 1909, pl. LXVII, 32.

Ireland

2. North of Ireland.
Evans 1881, 316, fig. 384.

North-eastern France

3. Compiègne, Oise.
Blanchet and Lambot 1975, 41 no. 26.
4. Giraumont hoard, Oise (170).

5. Seine at Paris.
De Mortillet 1903, pl. LXXXVIII, 1906.
6. Amiens Museum.
Breuil 1903, fig. 5, 34.

Netherlands

7. Berg-en-Terblijt hoard, Limburg (109).

LIST 146. Dutch spearheads.

Netherlands

1. Eindhoven, N. Brabant.
Jacob-Friesen 1967, 380 no. 1746.
West Baltic.
2. Brammershoopveen, Drenthe.
Ibid., 379 no. 1717, Taf. 179, 10.
Oldenburg.
3. Donkerbroek, Friesland.
Boeles 1951, 482, fig. 13, 4; Jacob-Friesen 1967, 275 n. 9.
Oldenburg.
4. Meerlo, Limburg.
Ibid., 260, 380 no. 1740, Taf. 151, 3.
Urnfield.
5. Hericke, Markelo, Overijssel.
Ibid., 259, 380 no. 1743, Taf. 154, 1; Tackenberg 1971, 83-84,
Liste 45c, 4.
West Baltic or Urnfield.

LIST 147. Tubular ferrules with disc terminals.

Belgium

1. Han, Namur (194).
Mariën 1973a, fig. 1, 1.
Iron rivet.

Netherlands

2. De Dellen hoard (206).

LIST 148. Stockstadt swords. MAP 56.

North-eastern France

1. La Chaussée-Tirancourt, Somme.
Breuil 1900, fig. 6, 63; Sprockhoff 1934, 124 no. 72; Müller-Karpe
1961, 112, Taf. 49, 2; Gaucher and Mohen 1974, 112, La Chaussée-
Tirancourt 7.
The provenance may be suspect.

LIST 149. Mörigen swords. MAP 56.

North-eastern France

1. Paris.
J.-P. Mohen.
2. Deville hoard, Seine-Maritime (173).
Variant I.

Belgium

3. Ghent, E. Flanders.
Desittere 1974b, 147 no. 12, fig. 11; de Laet 1974, 359, fig. 171.
Variant III.

Netherlands

4. Bergeik, N. Brabant.
Sprockhoff 1934, 128 no. 102, Taf. 26, 1; Müller-Karpe 1961, 74 no. 38; de Laet 1974, 359.
Variant I.
5. Meuse between Tegelen and Blerik, Limburg.
Sprockhoff 1934, 128 no. 103, Taf. 26, 3; Muller-Karpe 1961, 74 no. 37; de Laet 1974, 359, fig. 138, second right.

LIST 150. Auvernier swords. MAP 56.

England

1. Wickham Park hoard, Croydon, Surrey.
Inv. Arch GB39, 2.
This fragment could equally be from a Tachlovice sword.

North-eastern France

2. Abbeville area, Somme.
Gaucher and Mohen 1974, 105, Abbeville environs 18.
3. Abbeville area, Somme.
Ibid., 105, Abbeville area 19.
Both these swords are said to resemble a sword illustrated on an engraving of early nineteenth-century date (ibid., ill. 1, fig. 3); this shows a solid-hilted sword with an inset in the grip and a flat oval pommel with a projecting tang.
This resembles the Auvernier type more than the Tachlovice type.
4. Picquigny, Somme.
Ibid., 117, Picquigny 1.
A possible burial with a helmet and a sword like that on the engraving mentioned above.

Netherlands

5. Brabant.
Sprockhoff 1934, 136 no. 48, Taf. 34, 11; de Laet 1974, 359.

6. Nijmegen, Gelderland.
De Laet 1974, 359.

LIST 151. Tachlovice swords. MAP 56.

North-eastern France

1. Oise above Chauny, Aisne.
Vuaillat 1969, 284, fig. 2, 3.

LIST 152. Weltenburg swords. MAP 56.

North-eastern France.

1. Thiant, Nord.
Henault 1923, 102; Gaucher and Mohen 1974, 119, Thiant.

LIST 153. Antennae-pommel swords. MAP 56.

England

1. R. Witham below Lincoln.
Alnwick Castle Museum.
Evans 1881, 287, fig. 350; Brewis 1922-23, pl.XLVIII, 55;
Sprockhoff 1934, 113 no. 138, Taf. 12, 12; Davey 1973, 82 no. 199,
fig. 20; Thrane 1975, 282, Fundliste 16.
Fig. 70, 1.
2. Deeping Fen or Spalding Fen, Lincs.
A. G. Mac Cormick.
A sword resembling the Witham sword. Not mapped.
3. Snettisham hoard, Norfolk (161).
Undiagnostic fragment.

North-eastern France

4. Le Port Varin hoard, Oise (169).
Hilt fragment.
5. Heilly, Somme.
Breuil 1900, fig. 6, 65; Sprockhoff 1934, 112 no. 134; Gaucher and
Mohen 1974, 115, Heilly 1, ill. 1, figs. 1-2.

Netherlands

6. Onnen, Groningen.
Groninger Museum voor Stad en Lande 1896 I⁴.
Sprockhoff 1934, 113 no. 137, Taf. 12, 6; Thrane 1975, 282,
Fundliste 16.
Fig. 70, 2.

LIST 154. Swords with oval bronze pommels.

England

1. R. Cherwell.

Evans 1881, 286, fig. 349.
Solid hilt.

2. Yorkshire.
Brewis 1922-23, pl. XLVIII, 53.
Solid hilt.

Scotland

3. Tarves hoard, Aberdeen.
Coles 1959-60, 52, 97, fig. 6.
Separate hilt-plate and pommel over flanged hilt.
4. Talisker, Skye, Inverness.
Ibid., 84.
5. Grosvenor Crescent hoard, Edinburgh, Midlothian.
Brewis 1922-23, pl. XLVIII, 54; Coles 1959-60, 118, fig. 2, 4.
Separate grip and pommel over flanged hilt.
6. Leadburn, Peebles.
Ibid., 85.
7. Inverbroom, Ross.
Ibid.

LIST 155. Klein Auheim swords. MAP 57.

North-eastern France

1. Paars, Aisne.
Cowen 1955, 147 no. 9; Schauer 1971, 183 n. 2; Gaucher and Mohen 1972, 541.
2. Seine at Paris.
Cowen 1955, 147 no. 8; Mohen 1968, 803-805, B62, pls. XIII-XIV;
Gaucher and Mohen 1972, 541.

LIST 156. Port-Nidau swords. MAP 57.

Belgium

1. Scheldt at Eiland, Hamme, E. Flanders.
Bauwens-Lesenne 1962, 83.
2. Schoonaarde, E. Flanders.
Cowen 1955, 150 no. 7; Bauwens-Lesenne 1962, 179.

LIST 157. Miscellaneous late Urnfield flange-hilted swords. MAP 57.

North-eastern France

1. Giraumont hoard, Oise (170).
Fragment probably of a Macon sword.
2. Seine at Rouen, Seine-Maritime.
Cowen 1955, 151 no. 5, Taf. 15, 5.
Narrow grip, two rivets in straight shoulders.

3. Seine at Ile Fleurie, Meulan, Yvelines.
Ibid., 150 no. 4.
Blade fragment.

LIST 158. Carp's Tongue swords. MAP 58.

North-eastern France

1. Juvincourt hoard, Aisne (163).
2. Corbeil, Essonne.
J.-P. Mohen.
3. Pas de Grigny, Essonne.
Ibid., Briard 1965, 229.
4. Essonne.
J.-P. Mohen.
Two examples.
5. Seine at Caumont, Eure.
Verron 1971, 55 no. 23.
Solid hilt.
6. Illeville-sous-Montfort hoard, Eure (165).
Two fragments.
7. Seine at Pressagny-l'Orgeuilleuse, Eure.
Verron 1976a, fig. 4, 1.
8. Neuilly, Hauts-de-Seine.
J.-P. Mohen.
9. Mouy, Oise.
Blanchet 1976a, fig. 36, 7.
10. Saint-Pierre-en-Chastre, Oise (171).
Various fragments.
11. Dept. Oise.
J.-Cl. Blanchet.
12. Seine at Paris.
Briard 1971, 56, fig. 2, 4.
13. Seine at Paris.
Ibid., fig. 2, 6.
14. Seine at Paris.
J.-P. Mohen.
Two examples.
15. Seine at Anneville-sur-Seine, Seine-Maritime.
Verron 1973, fig. 45, 4.
16. Deville hoard, Seine-Maritime (173).
Five fragments.

17. Gravelle hoard, Seine-Maritime (174).
Various fragments.
18. Dreuil hoard, Somme (177).
Three fragments.
19. Plainseau hoard, Somme (178).
Seven fragments.
20. Saint-Roch hoard, Somme (179).
Three fragments.
21. Marlers hoard, Somme (180).
Two fragments.
22. Thiais hoard, Val-de-Marne (182).
Three fragments.
23. Near Versailles, Yvelines.
Briard 1971, 56, fig. 2, 5.

Belgium

24. Scheldt near Hamme, E. Flanders.
De Laet 1974, 359.
25. Scheldt at Melle, E. Flanders.
Museum Vleeshuis, Antwerp 2249.
26. Revaux, E. Flanders.
Museum Vleeshuis, Antwerp 2237.
27. Harelbeke, W. Flanders.
Bauwens-Lesenne 1963, 39; de Laet 1974, 359.
None of these finds is listed by Desittere (1976, 90), although he
accepts the Dutch finds (List 158, 28-30).

Netherlands

28. Herwen, Gelderland.
De Laet 1974, 359.
29. Nijmegen, Gelderland.
Cowen 1952, 145 no. 1, pl. XV, 4.
30. Meuse at Herten, Limburg.
Bloemers 1973, 17-19, afb.4, 3.

LIST 159. Ewart Park swords. MAP 59.

North-eastern France

1. Paris.
J.-P. Mohen.
2. Gravelle hoard, Seine-Maritime (174).
Two probable hilt fragments.
3. Rouen Museum.
Verron 1976a, 594; ? Verron 1971, 71 no. 74.

4. Amiens area hoard, Somme (176).
5. Plainseau hoard, Somme (178).
Three hilt fragments.

Netherlands

6. Millingen, Gelderland.
Desittere 1976, 90-91.
7. Nijmegen, Gelderland.
J. J. Butler.
Two examples.
8. Meuse, Limburg.
Bloemers 1973, 17,afb. 4, 5.

LIST 160. Socketed swords.

Britain

1. Leigh hoard, Essex (150).
2. Glamorgan.
Wheeler 1925, 160, fig. 51, 11; Cowen and Maryon 1935, pl. XXVII,
3. Edges outlined by single groove and slight beading.
3. Royston, Herts.
Cowen and Maryon 1935, pl. XXVII, 1.
4. Cumberlow Green hoard, Rushden, Herts.
Clark and Godwin 1940, pl. VII; Brailsford 1947, 176, fig. 3;
Coombs 1974b, fig. 1.
5. Dartford hoard, Kent.
Brailsford 1947, fig. 2.
6. Minnis Bay hoard, Kent (156).
7. Normanby Estate, Lincs.
Davey 1973, 82 no. 204, fig. 21.
8. Osbournby, Lincs.
Ibid., 82 no. 205, fig. 21; Cowen and Maryon 1935, pl. XXVI, 3.
9. Whittingham hoard, Nthld.
Cowen and Maryon 1935, 281-289, 295-309, pls. XXVI, 1-2; XXVII,
4.
10. British Museum.
Brailsford 1947, fig.4.

LIST 161. Bag-shaped chapes. MAP 60.

England

1. Reach Fen hoard, Cambs.
Inv. Arch GB17, 20.

2. Grays Thurrock hoard, Essex (148).
3. Leigh hoard, Essex (150).
4. Minnis Bay hoard, Kent (156).
5. Hayne Hill hoard, Saltwood, Kent.
Waller 1873, fig. 5; Osborne 1939, pl. XLVIII.
6. Thames at Old England, Brentford, Middlesex.
Wheeler 1929, pl. II, fig. 1, 8.
7. Eaton hoard, Norwich, Norfolk.
Norwich 1966, 28, fig. 79.
8. Felixstowe hoard, Suffolk.
Inv. Arch.GB16, 2.
9. Levington hoard, Suffolk.
Burgess 1968a, fig. 13, 24.

Ireland

10. Dowris hoard, Co. Offaly.
Eogan 1965, 173 no. 11, fig. 92.
11. Cloonmore, Co. Tipperary.
Ibid., no. 12, fig. 92.
12. Ireland.
Ibid., 174 no. 13, fig. 92.

North-eastern France

13. Venette, Oise.
J.-Cl. Blanchet.
14. Deville hoard, Seine-Maritime (173).
15. Graville hoard, Seine-Maritime (174).
Two examples.
16. Seine at Rouen, Seine-Maritime.
Ash 1927.2208.
17. Marlers hoard, Somme (180).
Two examples.

Belgium

18. Han, Namur (194).
Mariën 1975, 17-18, fig. 1, 4-7.
Four examples.

Netherlands

19. Weert, Limburg.
Desittere 1976, 90.

LIST 162. Bourget arrowheads.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 50, 16-17.
2. Saint-Pierre-en-Chastre, Oise (171).
J.-Cl. Blanchet; Blanchet 1976a, fig. 36, 15.
Several examples.

Belgium

3. Han, Namur (194).
Mariën 1974, 231.
At least six examples.

LIST 163. Bowls with cruciform handle-attachments.

England

1. Welby hoard, Leics. (158).
Handle-attachments. B1 or B2a,

Scotland

2. Adabrock hoard, Ross. (222).
Sheet fragments. B2b.

North-eastern France

3. Arzilliers hoard, Oise (167).
Complete. B2a.

LIST 164. Cast bronze vessels.

England

1. Welby hoard, Leics. (158).
One cup, convex body, angular shoulder, ribbed conical neck,
everted rim. Minor casting faults.

Scotland

2. Ardoe, Aberdeens.
Abercromby 1912, II, 21, 124, fig. 194, pl. CVIII, 0.7J
Convex-profile cup, miscast.
3. Glentamar hoard, Aberdeens.
Pearce 1970-71, 62-63, figs. 3-4, pl. 11.
Two cups from the same mould. Conical body, angular shoulder
defined by rib, conical neck with rib, everted rim, T-shaped handle
springs from shoulder.
4. Balmashanner hoard, Angus (145).
Convex-profile cup, miscast.

Belgium

5. Herstal, Liège.
Alenus-Lecerf 1974, 18, 43, fig. 7, 7:2.
Burial 7. Rim fragment of a cup.
6. Herstal, Liège.
Ibid., 20, 43, fig. 9, 11:3.
Burial 11. Two fragments, one appears to be from a concave neck,
the other is from the rim of a convex-profile cup with incised ornament.

LIST 165. Circular strap-crossings.

Britain

1. Parc-y-Meirch hoard, Denbigh. (147).
Nine examples in two sets.
2. Heathery Burn Cave, Co. Durham.
Inv. Arch. GB55, 42.
3. Welby hoard, Leics. (158).
Four examples.

LIST 166. Bugle-shaped objects. MAP 61.

One-piece. The number preceded by J refer to the list of Jockenhövel (1972, 107).

England

1. Reach Fen hoard, Cambs.
J 30.
2. Lulworth hoard, Dorset.
J 28.
3. Hatfield Broad Oak hoard, Essex.
J 26.
4. Cumberlow Green hoard, Rushden, Herts.
J 23.
5. Watford hoard, Herts. (153).
J 32.
6. Minster hoard, Kent.
J 29.
7. Thames at Old England, Brentford, Middlesex.
J 31; Wheeler 1929, pl. II, fig. 1, 11-13; Burgess 1968a, fig. 13, 21.
Three examples.
8. Eaton hoard, Norwich, Norfolk.
J 24.
9. Broadward hoard, Salop.
J 25.

10. Ham Hill, Somerset.
J 27.
11. Levington hoard, Suffolk.
Ipswich Museum 1961-103.
Fig. 69, 11.
12. Roseberry Topping hoard, Yorks.
Hixon 1832, pl. IV, e; Elgee 1950, 171.

North-eastern France

13. Graville hoard, Seine-Maritime (174).
J 11.
Two examples.
14. Plainseau hoard, Somme (178).
J 2.
15. Saint-Roch hoard, Somme (179).
16. Marlers hoard, Somme (180).

Two-piece.

Britain

17. Wayland's Smithy, Ashbury, Berks.
Atkinson 1965, 132 n. 19.
18. Parc-y-Meirch hoard, Denbigh. (147).
Separate shaft.
19. Merlin's Cave, Symonds Yat, Herefords.
Phillips 1931, pl. IVb, 9.
20. Isle of Harty hoard, Kent.
Inv. Arch. GB18, 29.
21. Marden hoard, Kent.
Poste 1858, pl. 13, 6.
Separate loop.
22. Green End Road hoard, Cambridge.
Clark 1938, fig. 20, 6, pl. VI.
23. Horsehope hoard, Peebles (162).

LIST 167. Parc-y-Meirch double rings.

Britain

1. Parc-y-Meirch hoard, Denbighs. (147).
Four outer and three inner rings.
2. Grange-over-Sands, Lancs.
Clough 1972, 49-52, fig. 1c.
Inner ring.

3. Walton-le-Dale, Lancs.
Davey and Forster 1975 no. 150.
Complete.
4. Welby hoard, Leics. (158).
Inner ring.
5. Gorleston hoard, Norfolk.
Norwich 1966, 27, fig. 12.
Inner ring.
6. Levington hoard, Suffolk.
Ipswich Museum 1961-103.
Fig. 69, 12.
One inner ring and a fragment of another.
7. Woolpit, Suffolk.
Edwardson n.d. (1969), pl. II, 115-116.
Two inner rings.

LIST 168. Rattle-pendants.

Wales

1. Parc-y-Meirch hoard, Denbighs. (147).
Two sets of six pendants.

Ireland

2. Lissanode, Co. Westmeath.
Rynne 1962, 383, pl. LI, lower.
Set of three pendants.
3. 'Ireland'.
Ibid., pl. LI, upper.
Five pendants and one ring.

North-eastern France

4. Essonne.
J.-P. Mohen.
5. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
De Mortillet 1903, pl. XCI, 1136.
Single pendant on ring.

LIST 169. Bar toggles.

England

1. Thurloe Walk hoard, Essex (149).
Small straight bar with expanded ends and swollen centre with remains of loop.

Ireland

2. Navan Fort, Co. Armagh.
Raftery 1975, 84, fig. 3.
Two examples, straight bar with expanded ends and circular loop.

3. Rathgall, Co. Wicklow.
Ibid., 83, figs. 1-2.
Straight bar with expanded ends and triangular loop.

Belgium

4. Han, Namur (194).
Curved bar with transverse ribbed ornament attached by short shaft to circular loop.

LIST 170. Guevaux discs.

North-eastern France.

1. Juvincourt hoard, Aisne (163).
2. Deville hoard, Seine-Maritime (173).
3. Gravelle hoard, Seine-Maritime (174).
4. Dreuil hoard, Somme (177).
Not from the Marlers hoard as suggested by Jockenhövel and Smolla (1975, 307).

Belgium

5. Han, Namur (194).

LIST 171. Phalerae.

England

1. Thames at Old England, Brentford, Middlesex.
O'Connor 1975, 216 no. 3, 221-222; Smith 1917-18, 17, fig. 17.
Flanged with a single ring of bosses.
2. Thames at Sion Reach, Middlesex.
O'Connor 1975, 217 no. 4, 222, fig. 3, 3.
Flanged with a single rib and ring of bosses.

Ireland

3. Bann at Toome Bar, Co. Antrim.
Ibid., 220.
4. Rathtinaun, Co. Sligo.
Raftery 1972, 3 n. 4.
Dr. B. Raftery kindly informs me that there are more phalerae in the National Museum of Ireland, Dublin.

North-eastern France

5. Haulchin hoard, Nord (166).
Convex with four peripheral rings of small bosses and an irregular cruciform motif of small bosses.
6. Deville hoard, Seine-Maritime (173).
One loop and sheet fragments of a flanged phalerae.

7. Graville hoard, Seine-Maritime (174).
Two loops and various sheet fragments of flanged phalerae with ribbed and bossed ornament; one more complete example.

Belgium

9. Han, Namur (194).
One convex with large loop and no central boss, one similar with peripheral ring of bosses.
10. Sinsin, Namur.
Raepsaet-Charlier 1971, 38-40, fig. 5, 3.
Narrow flange, large loop, no central boss.

LIST 172. Antler cheek-pieces. MAP 62.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 36, 16-17.
Two examples.
2. Pontpoint-Moru, Oise.
N. Freidin.
3. Saint-Pierre-en-Chastre, Oise (171).
4. Somme at Ailly-sur-Somme, Somme.
Breuil 1907, 53, fig. 12, 4; Gaucher and Mohen 1974, 105, Ailly-sur-Somme 2.

Belgium

5. Eke, E. Flanders.
Nenquin 1975.
6. Han, Namur (194).
Several examples.

LIST 173. Convex-profile buttons.

Bar loop.

England

1. Broadness hoard, Kent.
Burgess, Coombs and Davies 1972, fig. 14, 47.
1.6 cm.
2. Runnymede Bridge, Egham, Surrey.
D. Longley.
Two examples, 2.0 cm.
3. Staple Howe, Yorks.
Brewster 1963, 114, fig. 63, 2.
One hundred and twenty examples. 0.5-0.8 cm.

North-eastern France

4. Deville hoard, Seine-Maritime (173).
2.2 cm.
5. Saint-Roch hoard, Somme (179).
3.4 cm.

Belgium

6. Court-Saint-Etienne, Brabant.
Mariën 1958, 39 no. 117b, 40 no. 119b, fig. 4.
Several examples. 0.5-0.7 cm.
7. Court-Saint-Etienne, Brabant.
Ibid., 40 no. 120, fig. 4, 63 no. 126, fig. 9.
Several examples 1.3-1.4 cm.
8. Court-Saint-Etienne, Brabant.
Ibid., 78 no. 147, fig. 10.
4.0 cm.
9. Court-Saint-Etienne, Brabant.
Ibid., 65-66 no. 128b, fig. 9.
1.1 cm.
10. Plantée des Dames, Court-Saint-Etienne, Brabant.
Ibid., 229-230, fig. 44.
Barrow 4. Two examples 3.5 cm.
11. Morimoine, Brabant.
Ibid., 219-222, fig. 40, 4.
Barrow 1. 4.7 cm.
12. Port-Arthur hoard, E. Flanders (187).
2.0 cm.
13. Han, Namur (194).
Various examples, attachment uncertain.

Netherlands

14. Hijken hoard, Drenthe (203).
Two examples. 1.6 cm.
15. Weert, Limburg.
Comhaire 1894-95, pl. VIII, 88.

Curved loop.

England

16. Isleham hoard, Cambs. (127).
Forty-five examples.

North-eastern France

17. Deville hoard, Seine-Maritime (173).
2.4 cm.

Belgium

18. Morimoinne, Brabant.
Mariën 1958, 222, fig. 40, 5-8.
Barrow 1. Four examples. 1.0 cm.

Netherlands

19. Drouwen hoard, Drenthe (201).
Staples.

Belgium

20. Herstal, Liège.
Alenus-Lecerf 1974, 16, fig. 7, 4:3a.
Burial 4. 0.9 cm.
21. Herstal, Liège.
Ibid., 18, fig. 8, 6:3a.
Burial 6. At least eight examples. 1.0 cm.

Netherlands

22. Oss, N. Brabant (231).
Eight examples. 1.6 cm.

LIST 174. Conical looped buttons.

North-eastern France

1. Choisy-au-Bac, Oise.
N. Friedin.
Bar loop.
2. Plainseau hoard, Somme (178).
Slight flange, curved loop. 3.0 cm.
3. Saint-Roch hoard, Somme (179).
Bar loop. 3.6 cm.

LIST 175. Convex flanged buttons.

North-eastern France

1. Gravelle hoard, Seine-Maritime (173).
Two examples 4.6 cm.
2. Saint-Roch hoard, Somme (179).
5.4 cm.

LIST 176. Ribbed Buttons.

Britain

1. Llangwyllog hoard, Anglesey.
Lynch 1970, 209, fig. 68, 8-12.
Five examples. 2.2-2.6 cm.

2. Fortrie of Balnoon hoard, Banff.
Coles 1959-60, 107.
3. Reach Fen hoard, Cambs.
Inv. Arch. GB52, 8.
2.2 cm.
4. Heathery Burn Cave, Co. Durham.
Inv. Arch. GB55, 41.
2.2 cm.
5. Kensington hoard, London.
Inv. Arch. GB52, 8.
4.4 cm.
6. Runnymede Bridge, Egham, Surrey.
Longley 1976, 13, fig. 2, d.
2.0 cm.
7. Casterley Camp, Upavon, Wilts.
Cunnington 1913-14, 98, pl. I, 5.

LIST 177. Double-looped buttons.

Britain

1. Watford hoard, Herts. (153).
Two examples, central depression with spike.
2. Welby hoard, Leics. (158).
Central perforation.

LIST 178. Tanged studs.

Convex.

England

1. Ivinghoe Beacon, Bucks.
Cotton and Frere 1966-70, 204-206, fig. 10, 2, 4.
Two examples. 1.0 cm.
2. Isleham hoard, Cambs. (127).
Several examples.
3. Addington hoard, Surrey.
Inv. Arch. GB54, 17.
4.4 cm.
4. Runnymede Bridge, Egham, Surrey.
D. Longley.
0.9 cm.

North-eastern France

5. Deville hoard, Seine-Maritime (173).
1.4 cm.

Conical.

England

6. Ivinghoe Beacon, Bucks.
Cotton and Frere 1966-70, 209-210, fig. 11, 20.
1.7 cm.
7. Isleham hoard, Cambs. (127).
Several examples.

Belgium

8. Temse-Veldmolenwijk, E. Flanders.
De Laet, Nenquin and Spitaels 1958, 118 no. 85, fig. 163, pl. IV, 3.
2.3 cm.

LIST 179. Roll-headed pins. MAP 63.

England

1. Ivinghoe Beacon, Bucks.
Cotton and Frere 1966-70, 207-208, fig. 11, 13.
2. Heathery Burn Cave, Co. Durham.
Inv. Arch. GB55, 108.
3. Merlin's Cave, Symond's Yat, Herefords.
Phillips 1931, 22, pl. IVb, 8.
4. Thames at Old England, Brentford, Middlesex.
Museum of London A.10578.
5. Thames at Sion Reach, Middlesex.
Museum of London A11918.
6. Thames at Wandsworth, Surrey.
Museum of London A.4913.

There is a small group of roll-headed pins from the Layton Collection in the Museum of London; these should have a Thames provenance.

7. Fifield Bavant Down, Wilts.
Clay 1922-24, 479, pl. IX, 7.
8. Upham, Wilts.
Ash 1955.202.

North-eastern France

9. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. VII, 1, 15; Sandars 1957, 379, fig. 75, 5.
10. Haulchin hoard, Nord (166).
11. Saint-Pierre-en-Chastre, Oise (171).
Two examples.
12. Graville hoard, Seine-Maritime (174).
Two examples.

Belgium

13. Dendermonde, E. Flanders.
Museum Vleeshuis, Antwerp.
Two examples.
14. Scheldt at Schoonaarde, E. Flanders.
MRAH Brussels.
15. Han, Namur (194).
16. Sinsin, Namur.
Raepsaet-Charlier 1971, 63-67, fig. 7, 4.

Netherlands

17. Valkenswaard, N. Brabant.
Brunsting and Verwers 1975, 71, fig. 11.
Burial 51.

LIST 180. Nail-headed pins. MAP 63.

Britain

1. Hagbourne Hill, Chilton, Berks.
King 1812, pl. L; Harding 1972, 172, pl. 77, E.
2. Cop Round Barrow, Bledlow, Bucks.
Head 1934-40, 340, pl. 13, 5-6.
Two examples.
3. Lambourne's Pit, Chippenham, Cambs.
Clark and Fell 1953, 24.
4. Heathery Burn Cave, Co. Durham.
Inv. Arch.GB55, 95-103, 1-5-107.
Twelve examples.
5. Mucking, Essex.
Jones and Jones 1975, 141, fig. 48, 16.
6. Merlin's Cave, Symond's Yat, Herefords.
Phillips 1931, 22, pl. IVb, 6-7.
Two examples.
7. Mill Hill, Deal, Kent.
T. Champion.
8. The Breiddin, Montgomerys.
Musson 1974, 297, 306-308, fig. 26, 508-509.
Two examples, one with swollen shaft.
9. Runnymede Bridge, Egham, Surrey.
Longley 1976, 13.
10. Great Cheverell Down, Wilts.
Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection
J2 12.
Grinsell 1957, 74.
Fig. 71, 3.

11. Scarborough, Yorks.
Smith 1927, 181, fig. 5.
Two examples.
12. Staple Howe, Yorks.
Brewster 1963, 114, fig. 63, 1.

North-eastern France

13. Vendeuil, Aisne.
Lobjois 1976, 148, fig. 44, 4.
14. Fort-Harrouard, Eure-et-Loir,
Philippe 1927, pl. VIII, 7, 9, 16; Mohen 1973, 43, fig. 6.
Three examples; clay moulds.
15. Choisy-au-Bac, Oise.
N. Freidin.
16. Saint-Pierre-en-Chastre, Oise (171).
Two examples.

Belgium

17. Denterghem, W. Flanders.
Claerhout 1901, 195-196, pl. VIII, 7; de Loë 1931a, 122, D-E,
fig. 44.
18. Champ des Agaises, Haulchin, Hainault.
MRAH Brussels.
19. Sinsin, Namur.
Raepsaet-Charlier 1971, 59-62, fig. 7, 2, 6.
Two examples.

LIST 181. Vase-headed pins. MAP 64.

England

1. Totternhoe, Beds.
Hawkes 1940, 491, fig. 5.
2. Fenny Bentley hoard, Derbys.
Smith 1920, fig. 21.
3. Runnymede Bridge, Egham, Surrey.
Longley 1976, 13.

There is a small group of vase-headed pins from the Layton Collection in the Museum of London; these should have a Thames provenance.

North-eastern France

4. Essonne.
J.-P. Mohen.
5. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 42, pl. VIII, 12, 18.
Two examples.

6. Saint-Pierre-en-Chastre, Oise (171).
Two examples.

7. Seine at Paris.
Musée de l'Homme 37.
Fig. 71, 1.

Belgium

8. Grobbendonk, Antwerp.
Desittere 1968, 135, fig. 76, 3.

9. Zittaart, Antwerp.
Roosens and Meex 1975, 11, 16, fig. 4, 10.
Burial 7.

10. Dendermonde, E. Flanders.
Museum Vleeshuis, Antwerp.

11. Han, Namur (194).
Mariën 1974, 227, fig. 3.

Netherlands

12. Posterholt, Limburg.
Bursch 1942, afb. 23, 7-8; Desittere 1968, 125; Tackenberg 1971,
Liste 93, 4, Taf. 37, 2.

Iron.

Britain

13. Ffridd Faldwyn, Montgomerys.
O'Neil 1942-43, 53, fig. 14, 3; Savory 1976a, 20, 71 no. 96, 1,
fig. 35, 5.

14. All Cannings Cross, Wilts.
Cunnington 1923, 130, pl. 21, 5.

15. Fifield Bavant Down, Wilts.
Clay 1922-24, 483, pl. XI, 8.

LIST 182. Cup-headed pins. MAP 64.

England

1. Heathery Burn Cave, Co. Durham.
Inv. Arch. GB55, 104.

2. Brigg, Lincs.
Smith 1958, 80, fig. 1; Davey 1973, 86 no. 226, fig. 24; May 1976,
113-114, fig. 62, 3.

3. Thames at Sion Reach, Middlesex.
Museum of London A.10282.
Eogan 1974b, 99.
Fig. 71, 2.

Scotland

4. Point of Sleat hoard, Skye, Inverness.
Coles 1959-60, 46, 112.

Netherlands

5. Valthe, Drenthe.
Butler 1973a, fig. 6.

LIST 183. Wart-headed pins.

England

1. Thames at Sion Reach, Middlesex.
Celoria 1974.

LIST 184. Convex-headed pins. MAP 64.

England

1. Ivinghoe Beacon, Bucks.
Cotton and Frere 1966-70, 208, fig. 11, 14-15.
Two examples with small convex heads.
2. Fenny Bentley hoard, Derbys.
Smith 1920, fig. 21.
Broad globular head.
3. Tan Hill, All Cannings, Wilts.
Moore and Rowlands 1972, 65, pl. XVI, 79.
Small convex head.

North-eastern France

4. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 42, pl. VIII, 8, 23.
Two examples, decorated heads.
5. Saint-Pierre-en-Chastre, Oise (171).
6. Amiens area hoard, Somme (176).
Two examples with globular heads, one with swollen shaft.

Belgium

7. Herstal, Liège.
Alenus-Lecerf 1974, 29, 42, fig. 13.
Flat convex-profile head. Isolated find.
8. Lens-Saint-Servais. Liège.
Desittere 1968, 145, fig. 103, 4.
Small convex head, decorated shaft. Pit 5.
9. Saint-Vincent, Luxembourg.
Mariën 1964, 55-57, 152, fig. 35; Kubach 1977, 500 n. 81.
Grooved head. Barrow 29.

10. Dave, Namur.
Musée Archeologique, Namur.
Broad oval head, grooved shaft.
11. Han, Namur (194).
Alenus-Lecerf 1974, 42 n. 6.
12. Roch d'Emphare, Marche-les-Dames, Namur.
Knapen-Lescrenier 1970, 168.
13. Sinsin, Namur.
Raepsaet-Charlier 1971, 62-63, fig. 7, 3, 67-69, fig. 7. 5.
Two examples, one with plain spherical head and decorated shaft,
the other with decorated head.

Netherlands

14. Zuidlaren, Drenthe.
Van Giffen 1930, Taf. 19.
Secondary burial in barrow II.
15. Tegelen, Limburg.
Bloemers 1975, 28-29, afb. 17, 2.
Large head with ornament on the lower part. Possible associated with
a fragment of a decorated shaft.

LIST 185. Biconical-headed pins. MAP 65.

North-eastern France

1. Esquermes, Lille, Nord.
Mohen 1972, 461, fig. 10, 1.
2. Haulchin hoard, Nord (166).
3. Saint-Pierre-en-Chastre, Oise (171).
Four examples.

Belgium

4. Biez, Brabant.
De Loë 1931a, 137, fig. 57, 12.
Burial 14.
5. Biez, Brabant.
Ibid., 136, fig. 57, 11.
Burial 17.
6. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, fig. 8, left.
7. Scheldt between Wichelen and Schellebelle, E. Flanders.
Desittere and Weissenborn 1977, 49 no. 90, fig. 49.
8. Herstal, Liège.
Alenus-Lecerf 1974, 20, 42, fig. 8, 9:4b.
Burial 9.

9. Vaux-et-Borset, Liège.
Ibid., 42 n. 5; Desittere 1968, 77.
10. Achelse Dijk, Neerpelt, Limburg.
Roosens, Beex and van Impe 1975, 20, fig. 8, 20c.
Burial 20.
11. Neerpelt-De Roosen, Limburg.
Lanting 1976, 55-57, Abb. 2, B.
12. Neerpelt-Achel, Limburg.
Roosens, Beex and van Impe 1975, 22 n. 27; Desittere 1968, 136.
Two examples, from old excavations.

Netherlands

13. Best, N. Brabant.
Desittere 1968, 120, fig. 44, 2.
Burial 42.
14. Best, N. Brabant.
Ibid., 120, fig. 44, 3.
Burial 53.
15. Goirle, N. Brabant.
Verwers 1966a, 45, 47, fig. 8, 62.
16. The Heibloem, between Veldhoven and Steensel, N. Brabant.
Modderman and Louwe Kooijmans 1966, 21, 25, fig. 12.
Burial 51.
17. Riethoven, N. Brabant.
Desittere 1968, 126, fig. 56, 3.
Burial 6.
18. Riethoven, N. Brabant.
Ibid., 126, fig. 58, 3.
Burial 19.

LIST 186. Hollow globular-headed pins. MAP 65.

North-eastern France

1. Dreuil hoard, Somme (177).
2. North-eastern France.
Sandars 1957, 280 pl. XI, 6; Audouze and Courtois 1970, 33.

Belgium

3. Battel, Antwerp.
Museum Vleeshuis, Antwerp 2075 1/2-2/2.
Two examples.
4. Han, Namur (194).
Kubach 1977, 506 n. 41.

Netherlands

5. De Dellen hoard, Gelderland (206).
Two examples.
6. Waal at Nijmegen, Gelderland.
Kubach 1977, 506 n. 35.

LIST 187. Disc-headed pins with inset. MAP 65.

Britain

1. Ty Mawr hoard, Anglesey.
Lynch 1970, fig. 69, 8.
2. Isleham hoard, Cambs. (127).
3. Lulworth hoard, Dorset.
Drew 1935, 450, pl. LXIX, 5.
4. Sion Reach, Middlesex.
Musson 1974, 307.
5. Wandsworth, Surrey.
Ibid.

Ireland

6. Lough Gur, Co. Limerick.
O Riordain 1954, 360-361, 411, figs. 28, 2; 43, 5.
Two examples.

North-eastern France

7. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. VIII, 10, 20-22.
Four examples appear to have inset heads.

LIST 188. Knobbed disc-headed pins.

Belgium

1. Court-Saint-Etienne, Brabant.
Mariën 1958, 58, 158, fig. 8, 137, 140.
Two examples.
2. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, fig. 8, second left.
3. Sinsin, Namur.
Raepsaet-Charlier 1971, 53-59, fig. 7, 1.
Decorated head.

LIST 189. Pins with ribbed heads.

North-eastern France

1. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. VIII, 4.

2. Abbeville area, Somme.
Breuil 1907, fig. 1, 11; Gaucher and Mohen 1974, 105, Abbeville
environs 13.

Belgium

3. Biez, Brabant.
Inv. Arch. B8, 4; Mariën 1958, 191-192; Desittere 1968, 143,
fig. 98, 5.
Burial 21.
4. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, fig. 8, right.
5. Temse-Veldmolenwijk, E. Flanders.
De Laet, Nenquin and Spitaels 1958, 120, fig. 166.
Two fragments of bone pins.

Netherlands

6. Bergeijk-Wilreit, N. Brabant.
Desittere 1968, 73, 118, fig. 40, 4.
Burial 10.

LIST 190. Pins with small globular heads and ribs.

England

1. Minnis Bay, Kent.
Worsfold 1943, 33, fig. 5.
Found "in the immediate neighbourhood" of the hoard (156).

North-eastern France

2. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, pl. VIII, 5-6, 18.
Three examples.
3. Saint-Pierre-en-Chastre, Oise (171).
Blanchet 1976a, fig. 36, 10.
Decorated shaft.

LIST 191. Homburg bracelets. MAP 66.

England

1. Minnis Bay hoard, Kent (156).
2. Furness, Lancs.
Davey and Forster 1975, no. 151.

North-eastern France

3. Deville hoard, Seine-Maritime (173).
Two examples, one complete, one fragment.
4. Pantin hoard, Seine-Saint-Denis (175).
Three examples.

5. Dreuil hoard, Somme (177).
6. Choisy-le-Roi hoard, Val-de-Marne (181).

LIST 192. Balingen bracelets. MAP 66.

England

1. Minnis Bay hoard, Kent (156).

North-eastern France

2. Deville hoard, Seine-Maritime (173).
Two examples.
3. Plainseau hoard, Somme (178).

LIST 193. Bracelets with transverse ribbed ornament. MAP 66.

North-eastern France

1. Juvincourt hoard, Aisne (163).
Solid section, expanded terminals.
2. Combon hoard, Eure (164).
Two examples, one with plain terminals, one with expanded terminals.
3. Deville hoard, Seine-Maritime (173).
Solid section, worn, bent out.
4. Gravelle hoard, Seine-Maritime (174).
Two examples with everted terminals, one hollow, one solid.
5. Dreuil hoard, Somme (177).
Hollow, expanded terminal, oblique ribs.
6. Plainseau hoard, Somme (178).
Hollow, expanded terminals.
7. Marlers hoard, Somme (180).
Everted terminals.
8. Bonneville hoard, Yvelines (183).
Oblique ribs.

LIST 194. Bracelets with transverse line ornament. MAP 66.

England

1. Minnis Bay hoard, Kent (156).
Two examples, one oval section with oblique lines and pointillé and everted terminal, one solid with transverse lines and everted terminal.

North-eastern France

2. Combon hoard, Eure (164).
Plain terminals.
3. Saint-Pierre-en-Chastre, Oise (171).
Oblique ornament and slightly expanded terminals.

4. Deville hoard, Seine-Maritime (173).
Solid, expanded terminal.
5. Gravelle hoard, Seine-Maritime (174).
Four examples, two hollow section with everted terminals, one solid section with everted terminal, one solid section with plain terminals.
6. Plainseau hoard, Somme (178).
Everted terminals.
7. Marlers hoard, Somme (180).
Oblique ornament, everted terminal.
8. Bonneville hoard, Yvelines (183).
Two fragments, one solid with everted terminal, one solid with plain terminal.

LIST 195. Wallerfangen bracelets. MAP 67.

England

1. Stourmouth hoard, Kent (157).

North-eastern France

2. Dreuil hoard, Somme (177).
3. Plainseau hoard, Somme (178).
Two examples, narrow.
4. Choisy-le-Roi hoard, Val-de-Marne (181).

LIST 196. Decorated bracelets with C-shaped section. MAP 67.

Ireland

1. Near Castle Dawson, Co. Londonderry.
Bremer 1926.

North-eastern France

2. Deville hoard, Seine-Maritime (173).

LIST 197. Massive decorated bracelets with C-shaped section and everted terminals. MAP 67.

England

1. Shobury/Great Wakering hoard, Essex.
Inv.Arch. GB38, 1.
2. Probably Thames near Brentford, Middlesex.
Smith 1917-18, 17, fig. 16.

LIST 198. Odoorn bracelets. MAP 67.

Netherlands

1. Hijken hoard, Drenthe (203).
Two examples.

2. Odoorn, Drenthe.
Butler and van der Waals 1960, 93, fig. 43.
3. Onstwedder Holte hoard, Groningen (207).
Four examples, probably two pairs.

LIST 199. Lyzel bracelets. MAP 68.

England

1. Minnis Bay hoard, Kent (156).
Two fragments, one decorated.

North-eastern France

2. Juvincourt hoard, Aisne (163).
Decorated.
3. Lyzel hoard, Pas-de-Calais (172).
Six examples, four decorated.
4. Dreuil hoard, Somme (177).
Decorated.
5. Saint-Roch hoard, Somme (179).

Belgium

6. Biez, Brabant.
Alenus-Lecerf 1974, 42, n. 2.
7. Scheldt at Schoonaarde, E. Flanders.
Mariën 1950, 64-65, fig. 5.
Rib by terminals, undecorated.
8. Temse-Veldmolenwijk, E. Flanders.
De Laet, Nenquin and Spitaels 1958, 118 no. 84, fig. 162, pl. IV, 2.
9. Herstal, Liège.
Alenus-Lecerf 1974, 18, 41-42, fig. 8. 6:f.
Burial 6.
10. Herstal, Liège.
Ibid., 19, 41-42, fig. 8, 9:a.
Burial 9.
11. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 7.
Undecorated.

LIST 200. C-section bracelets with large everted terminals. MAP 68.

North-eastern France

1. Lyzel hoard, Pas-de-Calais (172).
Undecorated.
2. Graville hoard, Seine-Maritime (174).
Ribs by terminal.

3. Dreuil hoard, Somme (177).
Two examples, one with peripheral ribs and ribs by terminal, one with incised ornament.
4. Bonneville hoard, Yvelines (183).
Undecorated.

LIST 201. Hollow-section bracelets with large everted terminals. MAP 68.

North-eastern France

1. Gravelle hoard, Seine-Maritime (174).
Single rib by terminal.
2. Plainseau hoard, Somme (178).
Fragments of two examples with single rib by terminals.

Belgium

3. Port-Arthur hoard, E. Flanders (187).
Two examples, double rib by terminals.
4. Zandbergen hoard, E. Flanders (188).
Plain, thin body.
5. Spiennes hoard, Hainaut (189).
Plain.
6. Jemeppe hoard, Namur (195).
Two examples with terminals cast together, groups of ribs on body.

LIST 202. Hollow-section bracelets with plain terminals.

North-eastern France

1. Plainseau hoard, Somme (178).
Two examples.

Belgium

2. Spiennes hoard, Hainaut (189).

LIST 203. Bracelets with disc terminals. MAP 69.

England

1. Stourmouth hoard, Kent (157).

North-eastern France

2. Gravelle hoard, Seine-Maritime (174).
3. Dreuil hoard, Somme (177).
4. Marlers hoard, Somme (180).

LIST 204. Bracelets with rolled terminals. MAP 69.

North-eastern France

1. Juvincourt hoard, Aisne (163).
2. Gravelle hoard, Seine-Maritime (174).
3. Bonneville hoard, Yvelines (183).

LIST 205. Bracelets with ring terminals. MAP 69.

Thiais type.

England

1. Grays Thurrock hoard, Essex (148).

North-eastern France

2. Juvincourt hoard, Aisne (163).
3. Gravelle hoard, Seine-Maritime (174).
4. Dreuil hoard, Somme (177).
5. Saint-Roch hoard, Somme (179).
6. Thiais hoard, Val-de-Marne (183).
Six examples.
7. Bonneville hoard, Yvelines (183).
One complete example, and two terminals.

LIST 206. Bracelets with ring terminals. MAP 69.

Decorated.

England

1. Reach Fen hoard, Cambs.
Inv. Arch. GB17, 21.

North-eastern France

2. Dreuil hoard, Somme (177).

LIST 207. Recurved bracelets.

Britain

1. Llangwyllog hoard, Anglesey.
Lynch 1970, 208, fig. 63, 8.
2. Heathery Burn Cave, Co. Durham.
Inv. Arch. GB55, 6.

North-eastern France

3. Dreuil hoard, Somme (177).

LIST 208. Miscellaneous bracelets.

England

1. Dorset.
Salisbury and South Wiltshire Museum, Salisbury, Pitt Rivers Collection 2J 39.
Fig. 71, 6.
D-section, expanded oval terminals, grooved and pointillé ornament.
2. Dorchester, Oxon.
Ash 1954.755.
Fig. 71, 7.
Expanded terminals backed by transverse incised lines; other ornament may be worn away.
3. Stretton-on-the-Fosse, Warwicks.
Thomas 1974, 35, 40, pl. I.
A pair of penannular bracelets with two spaced ribs defined by grooves on the terminals. On the wrists of a skeleton in a cemetery of about twenty inhumation burials.

North-eastern France

4. Tourville-la-Rivière, Seine-Maritime.
Musée Municipal, Evreux 3644, 3646.
Coutil 1921, pl. VI.
Fig. 71, 4-5.
Two bracelets, annular with overlapping terminals, hollow C-section, ornament of incised lines, crosses, chevrons and triangles.

LIST 209. Lyzel pendants. MAP 70.

North-eastern France

1. Lyzel hoard, Pas-de-Calais (172).
Eight examples, five from one set and three from another.
2. Graville hoard, Seine-Maritime (174).
3. Dreuil hoard, Somme (177).

Belgium

4. Port-Arthur hoard, E. Flanders (187).
Two examples.
5. Spiennes hoard, Hainaut (189).
6. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. VI.
Three examples with peripheral rings.

LIST 210. Urnfield pendants. MAP 70.

England

1. Thames at Old England, Brentford, Middlesex.
Wheeler 1929, pl. I, fig. 2, 6; Piggott 1946, fig. 9; O'Connor forthcoming b.
Annular.

North-eastern France

2. Combon hoard, Eure (164).
Penannular.
3. Fort-Harrouard, Eure-et-Loir.
Sandars 1957, 275, fig. 79, 16; Audouze 1976, 164 no. 313, fig. 26.
Possibly triangular originally.
4. Saint-Pierre-en-Chastre, Oise (171).
Blanchet 1976a, fig. 36, 8.
Penannular.
5. Saint-Pierre-en-Chastre, Oise (171).
Ibid., fig. 36, 9; Audouze 1976, 160 no. 337, fig. 25.
Two examples, triangular.
6. Seine at La Cité, Paris.
Audouze 1976, 152 no. 249, fig. 23.
Dagger-shaped.
7. Saint-Denis, Seine-Saint-Denis.
Götze 1913, 166-168, Abb. 14-15.
Set of two wheel-shaped pendants and three triangular openwork pendants connected by smaller rings.
8. Seine at Villeneuve-Saint-Georges, Val-de-Marne.
Audouze 1976, 142 no. 334, fig. 19.
Dagger-shaped pendant and four rings connected by sheet strips.

Belgium

9. Han, Namur.
Mariën and Vanhaecke 1965, pl. 6.
Penannular.

Netherlands

10. Halsteren, N. Brabant.
Kossack 1954b, 97.
Penannular.

LIST 211. Penannular gilded rings. MAP 71.

England

1. Combe, Oxon.
Ash 1969.729.

2. Bishopstone, Wilts.
Megaw 1975, 23, figs. 1-2.
3. Bishopstone or Broadchalke, Wilts.
Moore and Rowlands 1972, 65, pl. XVI, 81.

Belgium

4. Borsbeek, Antwerp.
Van Impe 1972, 15, 23, afb. 10. 2.
Burial 10.
5. Herstal, Liège.
Alenus-Lecerf 1974, 19, 29, 41, figs. 8, 9:3; 13, 12.
Two examples, one from burial 9, the other an isolated find.
6. ? Neerharen, Limburg.
MRAH Brussels.
7. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 7; M.-E. Mariën.
Several examples.
8. Marche-les-Dames, Namur.
Musée Archeologique, Namur.
From a cremation burial.

Netherlands

9. Kneegsel, Vessem, Brabant.
Braat 1936, 45, afb. 31, c.
Two examples, one from burial 34, one lost.

LIST 212. Penannular gold rings. MAP 71.

England

1. Abbey Milton (Milton Abbas), Dorset.
Way 1849, 56, fig. 4.
2. Dorchester, Dorset.
Smith 1920, 53.
3. Piddletown (Puddletown) Heath, Dorset.
Way 1849, 56.
4. Maldon, Essex.
Smith 1920, 53.
5. Kings Lynn, Norfolk.
Ash 1927.2962.
6. Bridgewater, Somerset.
Smith 1920, 53.
7. Bracklesham, Sussex.
Arch. J., 8, 1851, 112, fig. 1.

8. Rustington, Sussex.
Curwen 1954, 209.
9. R. Cuckmere, Sussex.
Ibid.
10. Mancetter, Warwicks.
Smith 1920, 53.
11. Tenbury, Worcs.
Ash 1927.2961.

LIST 213. Beads. MAP 72.

Biconical.

England

1. Minnis Bay hoard, Kent (156).

North-eastern France

2. Lyzel hoard, Pas-de-Calais (172).
Twenty examples, sixteen large, four small.
3. Dreuil hoard, Somme (177).

Belgium

4. Port-Arthur hoard, E. Flanders (187).

Convex.

North-eastern France

5. Gravelle hoard, Seine-Maritime (174).
6. Dreuil hoard, Somme (177).
7. Plainseau hoard, Somme (178).
Eight hollow ribbed examples, one convex example.

Belgium

8. Port-Arthur hoard, E. Flanders (187).
9. Jemeppe hoard, Namur (195).
Two examples.

Netherlands.

10. Drouwen hoard, Drenthe (201).
Several examples.

Spiral.

North-eastern France

11. Fort-Harrouard, Eure-et-Loir.
Philippe 1936, fig. 54, 12-17.
Six examples.

12. Dreuil hoard, Somme (177).
13. Saint-Roch hoard, Somme (179).

Belgium

14. Biez, Brabant.
De Loë 1931a, 135, fig. 57, 2, 8-9.
Three examples.
15. Court-Saint-Etienne, Brabant.
Mariën 1958, 151;152 no. 139 a-c, fig. 26.
Flat burial I. Three examples.
16. Achel-Pastoorsbos, Limburg.
Beex and Roosens 1967, 15-16, 25, afb. 11, 3.
Burial 50.
17. Jemeppe hoard, Namur (195).
Three examples.

Netherlands

18. Drouwen hoard, Drenthe (201).
Several examples.

Tubular.

North-eastern France

19. Lyzel hoard, Pas-de-Calais (172).
Four examples, two segmented.
20. Deville hoard, Seine-Maritime (173).

Belgium

21. Jemeppe hoard, Namur (195).
Segmented.

LIST 214. Belt ornaments.

Rectangular.

England

1. Minnis Bay hoard, Kent (156).

North-eastern France

2. Saint-Pierre-en-Chastre, Oise (171).
3. Dreuil hoard, Somme (177).
Audouze 1974, 269 no. 11.

Circular.

England

4. Minnis Bay hoard, Kent (156).
One example of sub-type 3 and six of sub-type 4.

North-eastern France

5. Fort-Harrouard, Eure-et-Loir.
Audouze 1974, 273 no. 142, fig. 10, 38; Sandars 1957, 275, 379,
fig. 79, 9.
Atypical.
An example of sub-type 4 is illustrated by Philippe (1927, 43, pl. IX, 9).
6. Saint-Roch hoard, Somme (179).
Audouze 1974, 271 no. 125.
Four examples of sub-type 3.

LIST 215. Spirals.

Scotland

1. Caricdale, Kintyre, Argyll.
Jockenhövel and Smolla 1975, 307 n. 113.

North-eastern France

2. Juvincourt hoard, Aisne (178).
3. Esquermes, Lille, Nord.
Mohen 1972, 461, fig. 10, 2.
4. Haulchin hoard, Nord (166).
5. Saint-Pierre-en-Chastre, Oise (171).
6. Plainseau hoard, Somme (178).
7. Saint-Roch hoard, Somme (179).

Belgium

8. Port-Arthur hoard, E. Flanders (187).
One single spiral, one double spiral with sheet attachment.
9. Herstal, Liège.
Alenus-Lecerf 1974, 18, 20, 41, fig. 8, 9:4c.
Two examples, from burials 6 and 9.
10. De Roosen, Neerpelt, Limburg.
Roosens and Beex 1961, 14,afb. 3, 4.
Burial 56.

Netherlands

11. Berg-en-Terblijt hoard, Limburg (209).
Five examples and one fragment.

LIST 216. Twisted neck-rings.

England

1. Lulworth hoard, Dorset.
Drew 1935, 450, pl. LXIX, 3.

North-eastern France

2. Haulchin hoard, Nord (166).
3. Deville hoard, Seine-Maritime (173).
4. Nord de la France.
Felix and Deudon 1973, 275-276.

LIST 217. Lozenge-shaped mounts. MAP 73.

England

1. Reach Fen hoard, Cambs.
Inv. Arch. GB17, 30.
2. Watford hoard, Herts. (153).

North-eastern France

3. Marlers hoard, Somme (180).
Two examples.

LIST 218. Toothed plates. MAP 73.

England

1. Grays Thurrock hoard, Essex (148).
2. Watford hoard, Herts. (153).
3. Great St. Thomas Apostle hoard, City of London.
Monckton 1933, fig. c.

North-eastern France

4. Dreuil hoard, Somme (177).
Two examples.

LIST 219. Plain slides. MAP 73.

England

1. Grays Thurrock hoard, Essex (148).
2. Feltwell Fen hoard, Norfolk.
Inv. Arch. GB35, 14.
3. Addington hoard, Surrey.
Inv. Arch. GB54, 16.

North-eastern France

4. Graille hoard, Seine-Maritime (173).
5. Dreuil hoard, Somme (177).
Two examples.
6. ?Saint-Roch hoard, Somme (179).

LIST 220. Brooches.

England

1. Mincing Lane, City of London.
Ridgeway and Smith 1905-07, 109-110, fig. 17.
Elbow, disc foot.

North-eastern France

2. Forest of Compiègne, Oise.
Lambot 1975, 17 no. 1, fig. 1.
Thin curved bow.
3. Amiens, Somme.
Duval, Eluère and Mohen 1974, 33, 57, fig. 19, 4.
Elbow, elongated catch-plate.
4. Amiens, Somme.
Ibid., 33, 57, fig. 19, 5.
Elbow, elongated catch-plate.
5. Senlis Museum.
Ibid., 55; Blanchet and Lambot 1975, 65 no. 75.
Elbow, spiral disc catch-plate

Netherlands

6. Nijmegen, Gelderland.
Van Buchem 1941, 68 no. 2, pl. I, 2.
Elbow, disc catch-plate.

LIST 221. Double-edged razors with multiple-ring handles. MAP 74.

England

1. Watford hoard, Herts. (153).
At least two examples.
2. Minnis Bay hoard, Kent (156).
3. Thames at Old England, Brentford, Middlesex.
Museum of London A.10756.
Wheeler 1929, pl. I, fig. 2, 9; probably the same as Piggott 1946,
140 no. 90, fig. 8.
Fig. 71, 8.
4. Runnymede Bridge, Egham, Surrey.
Longley 1976, fig. 2, b.
Blade fragment with deep key-hole notch, probably from a razor of
this type.

North-eastern France

5. Corbeil, Essonne.
J.-P. Mohen.
6. Essonne.
J.-P. Mohen.

7. Giraumont hoard, Oise (170).
8. Graville hoard, Seine-Maritime (174).
9. Dreuil hoard, Somme (177).
10. ? Saint-Roch hoard, Somme (179).
11. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
De Mortillet 1903, pl.C, 1346.

Belgium

12. Biez, Brabant.
Inv. Arch. B8, 2.
Burial 21.
13. Court-Saint-Etienne, Brabant.
Mariën 1958, 93-94, fig. 8, 136.
14. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 6.
15. Sinsin, Namur.
Raepsaet-Charlier 1971, 20-27, fig. 2, pl. I.
16. Belgium.
MAN.

LIST 222. Dutch bifid razors. MAP 74.

Netherlands

1. Deurne, N. Brabant.
Undset 1882, 288-289, Taf. XXVII, 3.
This razor was illustrated by Lindenschnitt with the provenance of
Nijmegen (1870, Heft VIII, Taf. 2, 20); Tackenberg (1971, 135) treats
the two provenances as separate finds.
2. Goirle, N. Brabant.
Verwers 1966a, 45, 47, fig. 7, 55.
3. Weert, Limburg.
Comhaire 1894-95, pl. IV, 56.

LIST 223. Double-edged tanged razors.

North-eastern France

1. Graville hoard, Seine-Maritime (174).
Two examples.

Belgium

2. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 6.

LIST 224. Single-edged razors with ring handles. MAP 74.

England

1. Thames at Old England, Brentford, Middlesex.
Museum of London A.10675.
Wheeler 1929, pl. I, fig. 2, 7; Jockenhövel 1971, 220 n. 3.
Fig. 71, 9.
Notched back.
2. Thames at Old England, Brentford, Middlesex.
Ibid., pl. I, fig. 2, 3.
Concave back.

Belgium

3. Han, Namur (194).
Notched back.

Netherlands

4. Lingen.
RMOL.
Notched back.

LIST 225. Nordic razors. MAP 74.

England

1. Staple Howe, Yorks.
Brewster 1963, 111, fig. 61, 2, pl. 41.
The blade shows extensive marks of sharpening; it is unlikely that it was little used as suggested by Brewster. Loop handle.

Netherlands

2. Drouwen, Drenthe.
Butler 1969, afb. 35, foto 30.
S-shaped handle and upturned blade.
3. Drouwen, Drenthe.
Van Giffen 1943, 97-98, afb. 4, 57a; Sprockhoff 1956, II, 53 no. 60.
Tanged.
4. Harendermolen, Groningen.
Van Giffen 1930, 40-43, Taf. 34, 4a; Glasbergen 1954b, 25-26, fig. 48b, 9; Tackenberg 1961-63, 11, Liste 1a, 1.
Secondary burial 4 in barrow II. S-shaped handle, straight back.
5. Harendermolen, Groningen.
Van Giffen 1930, 40-43, Taf. 34, 1a; Glasbergen 1954b, 25-26, fig. 48b, 9; Tackenberg 1961-63, 12, Liste 6a, 1.
Secondary burial 1 in barrow II. S-shaped handle and upturned blade.
6. Wedderveen, Wedde, Groningen.
Tackenberg 1961-63, 13, Liste 11a, 1.
Loop handle.

7. Sittard, Limburg.
Roes 1952; Tackenberg 1971, Liste 69, 16.
Recurved handle, decorated blade; bronze, not iron as suggested by Roes.

LIST 226. Tweezers.

Britain

1. Llangwyllog hoard, Anglesey.
Lynch 1970, fig. 68, 2.
2. Ivinghoe Beacon, Bucks.
Cotton and Frere 1966-70, fig. 11, 16, 19.
One pair and probable fragments of another.
3. Mucking, Essex.
Jones and Jones 1975, 141.
4. Merlin's Cave, Symond's Yat, Herefords.
Phillips 1931, 22, pl. IVb, 5.
5. Thames at Old England, Brentford, Middlesex.
Wheeler 1929, pl. I, fig. 2, 5.
6. Feltwell Fen hoard, Norfolk.
Inv. Arch. GB35, 12.
7. Runnymede Bridge, Egham, Surrey.
Longley 1976, 13, fig. 2, c.
8. All Cannings Cross, Wilts.
Cunnington 1923, 119, pl. 18, 11.
Collar.
9. Grafton, Yorks.
Waterman, Kent and Strickland 1952-55, 393, fig. 6, 5.
10. Staple Howe, Yorks.
Brewster 1963, 113, fig. 61, 4.

Ireland

11. Ballykeaghra hoard, Co. Galway.
Eogan 1964, 338 no. 65, 2.
12. Bishopsland hoard, Co. Kildare.
Ibid., 277, 340 no. 40, 17, fig. 5, 17.
13. Rathtinaun hoard, Co. Sligo.
Ibid., 347 no. 67, 1.

North-eastern France

14. Fort-Harrouard, Eure-et-Loir.
Philippe 1927, 42, fig. 2, pl. IX, 28-31; 1936, fig. 54, 19, 21.
One pair broad and notched, at least four other pairs.

15. Cambronne-lès-Ribecourt, Oise.
Janse 1924; Thrane 1975, 226.
Decorated, apparently found with another pair, now lost.
16. Saint-Pierre-en-Chastre, Oise (171).
Twelve complete examples, three with suspension rings, two fragments.
17. Lyzel hoard, Pas-de-Calais (172).

Belgium

18. Biez, Brabant.
Inv. Arch. B8, 3.
Burial 21.
19. Morimoine, Brabant.
Mariën 1958, 223, fig. 43, 2.
Barrow 2. Iron.
20. Lommel-Kattenbosch, Limburg.
De Laet and Mariën 1950, 322, fig. 6, 20; Inv. Arch. B4, 5.
Burial 20. Iron.
21. Han, Namur (194).
Mariën and Vanhaeke 1965, pl. 6.

Netherlands

22. Knegsel, Vessem, Brabant.
Baat 1936, 45.
Burial 34.
23. Drouwen, Drenthe.
Butler 1969, foto 30.
Triangular blade.
24. Gasteren, Drenthe.
Van Giffen 1945, afb. 15A, c; Tackenberg 1971, Liste 78, 1.
Burial 45. Narrow shaft with triangular terminals.
25. Gasteren, Drenthe.
Van Giffen 1945, 118, no. 96, 121 no. 121, afb. 19D, 75; Tackenberg 1971, Liste 78, 2.
Burial 74. Narrow shaft with triangular terminals.
26. Zuidlaren, Drenthe.
Van Giffen 1930, 32-33, Taf. 19; Tackenberg 1971, Liste 85, 22.
Secondary burial in barrow II. Triangular blade.
27. Nierssen, Epe, Gelderland.
Holwerda 1908, 8-9, pl. IIIc, d; Tackenberg 1971, Liste 88b, 1.
Narrow shaft, triangular terminals with collar.
28. Haarle, Ootmarsum, Overijssel.
Tackenberg 1971, Liste 78, 3.
Narrow shaft, triangular terminals.

LIST 227. Linear-faceted axes. MAP 76.

England

1. Probably near Cambridge, Cambs.
Evans 1881, 127, fig. 145.
Quadruple ribs, central rib ending in pellet.
Not mapped.
2. ? Cambridge area.
CMAE. Provenance and number erased.
Fig. 74, 1.
Double ribs, central rib bifurcates, two rings, one containing pellet.
3. Meldreth hoard, Cambs.
Inv. Arch. GB13, 32.
Double ribs.
4. Reach, Cambs.
CMAE Z 11408.
Fig. 74, 2.
Triple ribs, central rib ending in ring-and-dot.
5. Wicken Fen hoard, Cambs. (213).
Two examples, one with triple ribs, one with quadruple ribs and broad central rib.
6. Blandford hoard, Dorset (214).
At least a dozen axes. Triple ribs.
7. Melcombe Horsey, Dorset.
Hodges 1960, 160, pl. IIIA, 'Milton'.
Stone mould for axes of the form represented in the Blandford hoard.
8. Portland hoard, Dorset (215).
Eleven examples, including three with central rib and pellet terminals on other ribs.
9. Sixpenny Handley hoard, Dorset (216).
Seven examples.
10. Claughton hoard, Lancs. (219).
Double ribs, short central rib.
11. Grantham, Lincs.
Davey 1973, 72 no. 154, fig. 14.
Double ribs.

12. Thames at Old England, Brentford, Middlesex.
Wheeler 1929, pl. I, fig. 1, 2.
13. ? Bressingham, Norfolk.
Norwich 1966, 21.
Not mapped.
14. Hockwold-cum-Wilton, Norfolk.
Moyse's Hall Museum, Bury St. Edmunds, 198.
Fig. 74, 3.
Quadruple ribs, central rib.
15. Hockwold-cum-Wilton, Norfolk.
Norwich 1966, 20.
16. Little Massingham, Norfolk.
Castle Museum, Norwich 143.951.
Fig. 74, 4.
Quadruple ribs.
17. Norwich, Norfolk.
BM.
18. Paston hoard, Norfolk (220).
Double ribs.
19. Watton hoard, Norfolk (221).
Seven examples, three with quadruple ribs, three with triple ribs.
20. Norfolk.
Norwich 1966, 20.
21. Norwich Museum.
Norwich 1977, 24.
22. Stoke Bruerne, Northants.
Kennett 1975, 15, fig. 5, g.
Triple ribs.
23. Holme Pierrepont, Notts.
East Midlands Archaeological Bulletin, 9, 1966, 36, fig. 7, 10.
Triple ribs.
24. West Moor, Clifton Hampden, Oxon.
Ash 1950.238.
Fig. 74, 5.
Double grooves, loop missing.
25. Butley hoards, Suffolk.
Ipswich Museum 1949.53-54; 1955.20.
Fig. 74, 6.
Three examples from two hoards.
26. Mildenhall, Suffolk.
Moyse's Hall Museum, Bury St. Edmunds.
Fig. 74, 7.
Double ribs and central ribs all ending in pellets.

27. Near Mildenhall, Suffolk.
Evans 1881, 127.
Not mapped.
28. Sompting hoard, Sussex (223).
Two examples from the same mould triple ribs ending in pellets,
central rings.
29. Calne, Wilts.
Annable and Simpson 1964, 70 no. 610.
Triple grooves, long axis of mouth at right angles to edge.
30. Donhead St. Mary, Wilts.
Moore and Rowlands 1972, 56, no. 46, pl. X.
Triple ribs.

Scotland

31. Islay, Argyll.
Coles 1959-60, 32.
Faceted axe with ribs on angles.
32. Delvine, Perthshire.
Ibid., 37, 72 no. 23, fig. 4, 6.
Double ribs ending in pellets.

Ireland

33. ? Ireland.
Evans 1881, 128, fig. 147.
Triple ribs.

North-eastern France

34. Eure.
Coutil 1921, pl. 3.
Triple ribs.
Not mapped.
35. Oise near Compiègne, Oise.
Musée Vivienel, Compiègne.
Blanchet and Lambot 1975, 42, fig. 30.
Fig. 74, 8.
Triple ribs.
36. Seine at Paris.
BM WG 195.
Fig. 74, 9.
Double ribs.
37. Saint-Roch hoard, Somme (179).
Two examples, hexagonal faceted axes, angles outlined by ribs.

Belgium

38. Court-Saint-Etienne, barrow 3, Brabant (228).
Double ribs.

39. Scheldt at Wichelen, E. Flanders.
Mariën 1958, 119.
Double ribs.

40. Champia, Chevetogne, Namur.
Musée Archeologique, Namur.
Knapen-Lescrennier 1970, 37.

41. Prov. Namur.
MRAH Brussels.
Unlooped. Not mapped.

Netherlands

42. Wachtum, Drenthe.
Butler 1963a, fig. 24.
Double ribs.
43. Waal at Nijmegen, Gelderland.
Butler 1961b, 205 n. 1; 1963a, pl. XII, below centre.
Uncertain provenance. Double ribs.
44. Ter Wisch, Vlachtwedde, Groningen.
Butler 1961b, 206 n. 1.
Similar to the Wachtum axe.
45. Monster, S. Holland.
Butler 1963a, 93, fig. 23.
Double ribs and central rib all ending in pellets.
46. Maastricht, Limburg.
MRAH Brussels.
Unlooped.
47. Meuse near Roermond, Limburg.
RMOL 1971/11-6.
Fig. 74, 10.
Double ribs. Unlooped.

LIST 228. Armorican socketed axes. MAP 77.

England

Hoards: Eggardon, Dorset; Nether Wallop, Hants; New Forest, Hants; Ventnor, Isle of Wight (Moore and Lewis 1969); Danebury, Hants. (Cunliffe and O'Connor 1979).
More than seventy axes from c. thirty-five find spots (Dunning 1959).

Wales

Hoard: Tintern, Monmouth. (Savory 1946-47).
These two axes are the only Welsh finds (Burgess 1962a, 21 n. 26; Savory 1975, 120, fig. 3).

Scotland

Hoard: Lamancha, Peebles. (Coles 1959-60, 124).
Apart from the three axes in this hoard, examples from Vale of Menteith,

Perths., Shetland and Stirlingshire (ibid., 72 no. 30, 73 nos. 2, 4) may be of Scottish provenance.

Ireland

At least four provenanced finds, many unprovenanced (Eogan 1964, 320; Flanagan 1959; Dunning 1959).

North-eastern France

Aisne.

No details available.

Eure.

Hoard: Evreux.

Thirty-two axes including fifteen from hoards (Verron 1976a, 596-597).

Nord.

Hoard: Cambrai area (53), Lille area (225), Lille Museum (226).

Flines-les-Raches (Mohen 1972, 463, fig. 10, 4; Gaucher and Mohen 1974, 114, Flines-les-Raches 1), Esquermes (Mohen 1972, 461, fig. 10, 3; Gaucher and Mohen 1974, 116, Lille 4).

Thirty-nine axes including thirty-seven from hoards.

Oise.

Six axes (J.-Cl. Blanchet).

Paris area.

c. thirty axes (J.-P. Mohen).

Pas-de-Calais.

Hoard: more than one in the Boulogne area (227).

Bois-Bernard (Mohen 1972, 461, fig. 10, 5-6; Gaucher and Mohen 1974, 110, Bois-Bernard), Boulogne (Gaucher and Mohen 1974, 111, Boulogne 11).
Twenty examples including seventeen from hoards.

Seine-Maritime.

Forty-six axes including twenty-two from hoards (Verron 1976a, 596-597).

Somme.

? Hoards: Abbeville, Amiens, Saint-Riquier (Briard 1965, 277).

Abbeville (Gaucher and Mohen 1974, 104, Abbeville 1, 5, 13; environs 3, 7-8), Amiens (ibid., 107-108, Amiens 32, 34-37, 39-40, 46-49;

environs 3, 7-8, 17-18), Arry (ibid., 109, Arry 3), Saignville (ibid., 118, Saignville), Somme (ibid., 120, Somme 1-9).

At least thirty-six axes.

Belgium

? Hoard: Pont de Fragnee, Liège.

Sixteen axes including four from hoards (Desittere 1974a, 114, Carte 1).

The axe given the provenance Wichelen (ibid., no. 4) is really from Berlare, E.Flanders (Desittere and Weissenborn 1977, 23 no. 13, fig. 9).

Netherlands

Four axes (Desittere 1974a, 114, Carte 1).

LIST 229. Baexem axes. MAP 78.

England

1. Thames at Sion Reach, Isleworth, Middlesex.
Museum of London A.11961.
Roe 1966, 235 no. 127, fig. 8, B; Brandt 1973, 42 no. 217.
Fig. 74, 11.
Examination of a thin section from this axe at the Institute of Geological Sciences, London, has shown that it is composed of amphibolised dolerite or epidiorite, probably not of British origin.

Belgium

2. Scheldt at Moerzeke, E. Flanders.
Lecomte 1975, 162, Abb. 2.
From a collection which includes objects of dubious provenance.

LIST 230. Socketed leather-working knives.

Britain

1. Cardiff hoard, Glam. (217).
Four examples.
2. Staffordshire.
Ash NC 400.
Fig. 75, 1.
Though the socket is now broken, this is presumably the example illustrated complete by Plot (1686, 404, Tab.XXXIII).
3. Mildenhall, Suffolk.
Roth 1974, 46, IV 2, Taf. 5, 4.

LIST 231. Heeled socketed sickles.

Britain

1. Cardiff hoard, Glam. (217).
2. Llyn Fawr hoard, Glam. (218).
Three examples, two bronze, one steel.
3. Dores, Inverness.
Fox 1939, 244 no. 27, fig. 6, pl.XXVI.

Ireland

4. 'Ireland.'
Ibid., 245 no. 39, fig. 7.
5. 'Ireland.'
Ibid., 246 no. 46, fig. 7.

North-eastern France

6. Seine at Paris.
Ash 1927.2045.
Ibid., 225, pl. XXVI, 0; Sandars 1957, 281, pl. XI, 1.
Fig. 75, 2.

LIST 232. Iron knives.

Belgium

1. Court-Saint-Etienne, Brabant.
Mariën 1958, 106-108, nos. 214-215, fig. 16.
Champ de la Ferme Rouge, barrow 2, two examples, both single-edged
and tanged with straight backs.

Netherlands

2. Oss, N. Brabant (231).
Three fragments of single-edged blades.

LIST 233. Iron spearheads.

Britain

1. Llyn Fawr hoard, Glam. (218).

Belgium

2. Court-Saint-Etienne, barrow 3, Brabant (228).

LIST 234. Hallstatt iron swords. MAP 79.

Britain

1. Llyn Fawr hoard, Glamorgan (218).

Belgium

2. Meer, Antwerp.
De Loë 1931a, 176; Mariën 1958, 235 n. 6; Bauwens-Lesenne 1965,
109.
Two short swords.
3. Court-Saint-Etienne, Brabant.
Mariën 1958, 102-103, no. 210, fig. 15.
Champ de la Ferme Rouge barrow 1. 95.0 cm long.
4. Court-Saint-Etienne, Brabant.
Ibid., 28 no. 201, fig. 3.
Barrow A. Two blade fragments.
5. Court-Saint-Etienne, Brabant.
Ibid., 79-80 no. 205, fig. 11.
Barrow L. Blade fragment 61.3 cm long.
6. Court-Saint-Etienne, Brabant.
Ibid., 80-81 no. 206, fig. 11.
Barrow M. Fragmentary 55.5 cm long.
7. Court-Saint-Etienne, Brabant.
Ibid., 66 no. 218, fig. 7, 11.
Unstratified fragment with bronze rivets.

8. Court-Saint-Etienne, Brabant.
Ibid., 41-42 nos. 202-203, fig. 5.
Unstratified. Two fragments of a long sword and one fragment of another sword; perhaps another sword.
9. Court-Saint-Etienne, Brabant.
Ibid., 42-43, 74 nos. 204, 219, fig. 5.
Two short swords 47.0 and 47.1 cm long.
10. Morimoine, Brabant.
Ibid., 218 no. 1, fig. 14; Inv. Arch. B5, 1.
Barrow 1. 92.0 cm long.
11. Havre, Hainaut.
Mariën 1958, 233.
Burial 1, presumably iron.
12. Chevaudos, Gedinne, Namur.
Ibid.
Three examples, barrows 2, 13, and 14.

Netherlands

13. Oss, N. Brabant (231).
114.0 cm long including pommel and additional blade fragment.
14. Someren, N. Brabant.
Kam 1956.
From a burial, c. 90 cm long.
15. Meerlo, Limburg (233).

LIST 235. Antennae-pommel iron swords.

England

1. Thames at London.
Brailsford 1953, 60, fig. 23, 1.

Belgium

2. Court-Saint-Etienne, barrow 3, Brabant (228).

LIST 236. Hallstatt chapes.

Numbers preceded by C refer to the list of Cowen (1967, 453).

England

1. Teversham, Cambs.
Ash 1927.2399.
C4; Schauer 1971, 218 n. 4.
Fig. 75, 3.
Prüllsbirkig type.
2. Thames at Sion Reach, Isleworth, Middlesex.
C1; Schauer 1971, 218 n. 2; presumably Wheeler 1929, pl. II, fig. 1, 9.
Prüllsbirkig type.

3. Thames at Teddington, Middlesex.
C2; Schauer 1971, 218 n. 1.
Prüllsbirkig type.
4. Coplow Farm, Undley, Lakenheath, Suffolk.
Ipswich Museum 1936.244.13.
C3; Schauer 1971, 218 n. 3; Evans 1881, 306, fig. 375.
Fig. 75, 4.
Prüllsbirkig type.
5. Coplow Farm, Undley, Lakenheath, Suffolk.
Ipswich Museum 1936.244. 14.
C16; Schauer 1971, 221 n. 4.
Fig. 75, 5.
Neuhaus type.
6. Thames at Wandsworth, Surrey.
C5; Schauer 1971, 218 n. 8; ? Evans 1881, 307, fig. 376.
Büchenbach type.
7. Ebberston, Yorks.
C6; Schauer 1971, 217 n. 6; Burgess 1968a, fig. 18, 7.
Prüllsbirkig variant, cf. Schauer 1971, 217 no. 5.
8. England, probably Thames.
C7; Journal of the British Archaeological Association, 17, 1861.
322, pl. 30, 3.
Büchenbach or Frankfurter Stadtwald type.

Ireland

9. Keeloge Ford, Co. Galway.
C17-18; Schauer 1971, 221 n. 5; Eogan 1965, 174 nos. 15-16, fig. 93.
Two examples, both Neuhaus type.
10. Strabane, Co. Tyrone.
C8; Schauer 1971, 218 n. 9; Eogan 1965, 175 no. 17, 176 no. 24,
fig. 93.
Two examples, both Büchenbach type.
11. 'Ireland'.
C9-14; Schauer 1971, 218 n. 7; Eogan 1965, 175-176 nos. 18-23.
Six examples, all Büchenbach type.

Belgium

12. Court-Saint-Etienne, Brabant.
Mariën 1958, 44 no. 108, fig. 4.
Fragment, probably of Oberwaldbehrungen type.
13. Court-Saint-Etienne, Brabant.
Ibid., 60 no. 107, fig. 10.
Fragment of Prüllsbirkig type.
14. Harchies, Hainaut.
Ibid., 60, 234.
Two examples, probably of Prüllsbirkig type.

Netherlands

15. Wassenaar, S. Holland.
Ibid., 236; Kossack 1959, 285, A1, 3.
Probably Prüllsbirkig type.
16. Witte Brug, between The Hague and Scheveningen, S. Holland.
Mariën 1958, 236; de Wit 1964, 6, fig. 5.
Prüllsbirkig type.

LIST 236. Iron daggers.

England

1. Thames at Battersea 1, Surrey.
Jope 1961, 330 no. 4, pl. XX.
2. Thames at Battersea 2, Surrey.
Ibid., 331 no. 6, fig. 2, pl. XX.
3. Thames at Mortlake 1, Surrey.
Ibid., 329 no. 1, fig. 1, pl. XVII-XVIII.
4. Thames at Mortlake 2, Surrey.
Ibid., 330 no. 2, pl. XIX.
5. Thames.
Ibid., 330 no. 3, fig. 2.
6. Thames.
Ibid., 331 no. 5, pl. XX.

Belgium

7. Luttre, Hainaut.
Mariën 1963.
The patina and preservation indicate that this piece was a river find.

Netherlands

8. Haps, N. Brabant, burial 190 (230).

LIST 237. Bronze arrowheads.

England.

1. ? Mount Batten, Plymouth, Devon.
Clarke 1971, 149, fig. 3, 8.
Socketed, trilobate, biconical profile.

North-eastern France

2. Bures-sur-Yvette, Essonne.
Benoit 1956, 6, 16 n. 6.
Socketed, trilobate, triangular profile.
3. Saint-Denis-le-Ferment, Eure.
Kleeman 1954, 117, Abb.1, g.
Socketed, trilobate, triangular profile.

4. Oise at Méru, Oise.
Ibid., 120, Abb. 3, a.
Barbed and tanged, convex profile.

5. Lillebonne, Seine-Maritime.
Verron 1976b, 805.
"à ailerons decales".

In the Musée Archeologique Municipal, Laon, Aisne, 0.259, there are about a dozen socketed trilobate arrowheads, mostly of triangular profile, which were formerly part of the collection of the Société Académique de Laon and may be of local provenance (N. Freidin). There is an unprovenanced socketed trilobate arrowhead of triangular profile in the Musée Départemental de l'Oise, Beauvais (Blanchet and Lambot 1975, 54 no. 52).

Belgium

6. Turnhout, Antwerp.
Museum Vleeshuis, Antwerp, 1349.
Fig. 75, 6-8.
Three examples, socketed, two trilobate of narrow biconical profile, one quadrilobate.
7. Kattepoel, Schaerbeek, Brabant.
Mariën 1957, 37; 1958, 231, fig. 45.
Socketed, trilobate, biconical profile.

LIST 239. Iron arrowheads.

Netherlands

1. Haps, burial 190, N. Brabant (230).
Three examples, socketed.
2. Havelterberg, Drenthe.
Verwers 1972, 60 n. 23.
Several examples.

LIST 240. Buckets. MAP 80.

Netherlands

1. Oss, N. Brabant (231).
2. Ede, Gelderland.
Kimmig 1962-63, 85-87, Abb. 12.
Conical body of single sheet, riveted. High angular shoulder with two ribs, upright neck with rolled rim, reinforced by a ring of rolled sheet bronze with an iron core. Two looped handle-attachments riveted onto outside neck. Low base-plate riveted to body. Contained burnt bones.
3. Baarlo, Limburg.
Braat 1935; de Laet 1974, 403, fig. 192.
Conical body of two sheets, riveted. High angular shoulder with two ribs, upright neck with rolled rim. Two strap-handles with T-shaped terminals and ribbed and bossed ornament, attached below shoulder and inside neck

by two rivets; each handle holds a lozenge-section ring. Low base-plate riveted to body. Found in a barrow.

LIST 241. Ribbed pails. MAP 80.

England

1. Weybridge, Surrey.

Dale 1905-07; Stjernquist 1967, I 71; II 30-31 no. 44, Taf. XIII, 5; XLII, 1.

Ten horizontal ribs, the uppermost rib rolled inwards to form the rim. Double looped attachments with three rivets holding two handles with twisted bodies and recurved terminals. Body folded around base-plate which has one broad concentric rib and three narrow ones around a central punt. Perhaps from the R. Wey (Hanworth and Tomalin 1977, 1).

Netherlands

2. Wijchen, Gelderland (232).

Handle and two attachments.

LIST 242. Miscellaneous vessels.

England

1. Minster, Kent.

Harbison and Laing 1974, 4-5 no. 3, pls. I-IIa.
Fragment of the handle of a flagon.

2. Thames at London.

Hawkes and Smith 1957, 191-198, pl. XXIII, f, fig. 11, a.
Cauldron and single seamless sheet, deep profile, broad mouth with inturned, almost horizontal rim with central ridge and near-vertical lip. Three rivet-holes with traces of iron rust.

3. Northampton, Northants.

Harbison and Laing 1974, 6-8 no. 7, pls. IIb-III.
Oenochoe with trefoil mouth.

4. Ixworth, Suffolk.

Ridgeway and Smith 1905-07, 108, fig. 11; Clarke 1939, 30, pl. VI.
Flange of a bowl, decorated with concentric ribs separating bands of transverse ribs, zoomorphic motifs and bosses.

LIST 243. Flesh-hooks.

Ireland

1. Dunaverny, Co. Antrim.

Megaw 1970, 51-52 no. 23; Jockenhövel 1974a, 330 no. 14, Abb. 1.
Bronze. Tripartite with bands of transverse lines on the sockets. Knobbed terminal with pendant rings and two bird figures; five pendant rings and five bird figures on the central section; T-shaped double hook.

Belgium

2. Court-Saint-Etienne barrow 3, Brabant (228).
Iron hook.

Netherlands

3. Wijchen, Gelderland (232).
Bronze knobbed terminal.

LIST 244. Hallstatt phalerae.

Britain

1. Llyn Fawr hoard, Glamorgan (218).
Three examples, two with disc and loop in one, one with separate disc and loop.
2. Thames at Brentford, Middlesex.
O'Connor 1975, 215 no. 1, fig. 1.
Disc and loop in one.
3. London Museum (now Museum of London).
Ibid., no. 2, fig. 2.
Attachment lost but probably disc and loop in one.
4. Sompting hoard, Sussex (223).
Conical boss in two stages.

Belgium

5. Court-Saint-Etienne, Brabant.
Mariën 1958, 78 no. 146, fig. 10.
Disc and loop in one.
6. Court-Saint-Etienne, Brabant.
Ibid., 38-39 no. 117, fig. 4.
Separate disc and loop.
7. Court-Saint-Etienne, Brabant.
Ibid., 39-40 nos. 118a-b, fig. 4.
Two separate loops.
8. Court-Saint-Etienne, Brabant.
Ibid., 63 no. 127, fig. 9.
Separate loop.
9. Court-Saint-Etienne, Brabant.
Ibid., 146-147 no. 152, fig. 25.
Probably the rolled rim of a phalera.

LIST 245. Cheek-piece ornaments.

England

1. Osgodby, Lincs.
Davey 1973, 86 no. 214, fig. 23.
Conical, bar attachment.

2. Newark hoard, Notts.
Inv. Arch. GB36, 1-2.
Two examples, conical with central perforation.

Belgium

3. Court-Saint-Etienne, Brabant.
Mariën 1958, 61-62 nos. 123-124, fig. 9.
Two examples, conical with broad flange and riveted bar attachment.

LIST 246. Cheek-pieces.

Kossack type Ib.

Belgium

1. Court-Saint-Etienne barrow 3, Brabant (228).
Two sets.
2. Morimoine, Brabant.
Mariën 1958, 219 no. 3, fig. 40.
Barrow 1. One set.

Netherlands

3. Oss, N. Brabant (231).
Two sets and remains of others.

Kossack type Ic.

Netherlands

4. Meerlo, Limburg (233).
Probably two sets.

La Quenique type.

Wales

5. Llyn Fawr hoard, Glamorgan (218).
One set.

Belgium

6. Court-Saint-Etienne, Brabant.
Mariën 1958, 32-36 nos. 112-113, fig. 3.
One set. Barrow A.
7. Court-Saint-Etienne, Brabant.
Ibid., 86-87 no. 114, fig. 12.
One example. Barrow Z.

LIST 247. Yoke mounts.

Britain

1. Llyn Fawr hoard, Glamorgan (218).
2. Staple Howe, Yorks.
Brewster 1963, 115, fig. 63, 14.
One fragment of a cup, possibly from a yoke mount.

Belgium

3. Court-Saint-Etienne, Brabant.
Mariën 1958, 28-32 no. 115, fig. 3.
Barrow A.

Netherlands

4. Wijchen, Gelderland (232).
Two examples.

LIST 248. Concave oval attachments.

Belgium

1. Court-Saint-Etienne, Brabant, barrow 4 (299).
Two examples, lateral perforations.

Netherlands

2. Oss, N. Brabant (231).
Two examples, central perforations.

LIST 249. Saint-Vincent pins.

Belgium

1. Saint-Vincent, Luxembourg.
Mariën 1964, 98, fig. 73, 128, fig. 99.
Two examples, one isolated find, one from barrow 61; both have
iron heads and shafts.

Netherlands

2. Oss, N. Brabant (231).
Two examples, bronze heads, iron shafts.

LIST 250. Swan's-neck pins.

England

1. Middle Hill, Islip ('Woodeaton'), Oxon.
Dunning 1934, 288, fig. 2. 2.
Bronze.
2. Brighton, Sussex.
Cunliffe 1974, fig. 10:9, 2.
Bronze.
3. All Cannings Cross, Wilts.
Cunnington 1923, 126, pl. 21, 1; Dunning 1934, fig. 2, 1.
Iron with long ribbed head terminating in a knob.

LIST 251. Miscellaneous Early Iron Age pins.

England

1. Kent's Cavern, Torquay, Devon.

- Pearce 1971-74, 189-190, fig. 3, 2.
Curved neck with five grooves.
2. Jordan Hill, Weymouth, Dorset.
Dunning 1934, 288, fig. 2, 3.
Curved neck with two notches on the head.
 3. Hammersmith, Middlesex.
Ibid., fig. 2, 6.
Curved neck, rolled head.
 4. Fengate, Peterborough, Northants.
Ibid., fig. 2, 7; Hawkes 1943, 197-199; Spratling 1974.
Iron shaft, curved neck, bronze disc head.
 5. Middle Hill, Islip ('Woodeaton'), Oxon.
Dunning 1934, 288, fig. 2, 5; Kirk 1949, 15 nos. 2-3; Harding 1972, 170, pl. 73, A-B.
Two examples, curved neck with upright head, flattened, trapezoidal and bifurcated.
 6. South Cadbury, Somerset.
Alcock 1971, 5, pl. IV, c.
Curved neck.
 7. Ham Hill, Somerset.
Dunning 1934, 288, fig. 2, 4.
Curved neck, almost upright head with three notches.
 8. Portslade, Sussex.
Cunliffe 1974, fig. 10:9, 3.
Curved neck.

Wales

9. Sudbrook, Monmouth.
Nash-Williams 1939, 75, fig. 9, 12; Savory 1976a, 70 no. 91, fig. 35, 7.
Fragment with curved neck.

Netherlands

10. Haps burial 190, N. Brabant (230).
Iron, bent shaft broken off above.

LIST 252. Hallstatt bracelets and collars.

Britain

1. Clynnog, Caerns.
Hemp 1931; Savory 1976a, 56 no. 15, fig. 36.
Massive section, bossed ornament, hinged link with dowel attachment.
2. Cold Kitchen Hill, Wilts.
Nan Kivell 1927-29, 141-142.
Fragment, hollow bosses joined by massive bars.

3. Scarborough, Yorks.
Anon., 1934.
Contiguous terminals, massive section, bosses separated by narrow double ribs.
4. Thames.
Museum of London 68.28/7.
Fig. 75, 9.
Annular, massive section, alternate broad ribs separated by grooves.

Ireland

5. Near Antrim, Co. Antrim.
Armstrong 1911.
Two examples, contiguous terminals, bosses separated by narrow ribs. The lower bracelet in Armstrong's illustration has two bosses without a separating rib, then a double rib; this is presumably the example from Co. Antrim, Ash 1910.686.
Fig. 75, 10.
6. Kilmurry hoard. Co. Kerry.
O Riórdain 1946, 161, pl. XIV, 7; Eogan 1964, 239 no. 39.
Penannular, large globular terminals, transverse ornament on body.
7. Co. Derry.
Jope 1958.
Annular, spaced biconical boss flanked by narrow ribs.

North-eastern France

8. Barc, Eure.
Verron 1975b, 19.
Hallstatt bracelet.
9. Huest, Eure.
Ibid.; N. Freidin.
Hollow bracelet, similar to the following example.
10. Jouy-sur-Eure, Eure.
Verron 1971, 79, fig. 81; 1976b, 806, fig. 1, 19-10; N. Freidin.
Six examples in Rouen Museum. penannular, hollow, ornamented; seven examples in Evreux Museum, four hollow, six massive.
11. Marcilly-sur-Eure, Eure.
Eluère 1972, 103 no. 130.
Overlapping terminals, thin round section.
12. Longeuil-Saint-Marie, Oise.
Blanchet, Jouve and Durvin 1976, fig. 40, 9.
Annular, flat section, decorated.
13. Villers-sur-Coudun, Oise.
Blanchet and Samadet 1975, figs. 3-4.
Annular, angular section, notched ornament.

14. Erondelle, Somme.
J.-Cl. Blanchet; Breuil 1907, fig. 5, 14-15; Gaucher and Mohen 1974, 113, Erondelle 1.
Two examples, both massive penannular, one plain, one with incised ornament.
15. Villeneuve-Saint-Georges, Val-de-Marne.
Eluere 1972, 104-106 nos. 131-133.
Three examples, one annular with sub-rectangular section, one penannular with D-section, one penannular with lozenge-section and expanded terminals.

Belgium

16. Elouges, Hainaut.
De Laet and Mariën 1950, 325.
Hollow neck-ring with geometric ornament.
17. Lommel-Kattenbosch, Limburg.
Ibid., 325, fig. 8.
Fragments of a hollow neck-ring. Barrow 22.
18. Breuvanne, Luxembourg.
Mariën 1964, 163, fig. 10.
Fragmentary bracelet, narrow rectangular section with transverse notched ornament.

Netherlands

19. Haps, N. Brabant.
Verwers 1972, 54, 161, Abb. 29.
Wendelring. Burial 81.

LIST 253. Bracelets with everted terminals.

Belgium

1. Lommel-Kattenbosch, Limburg.
De Laet and Mariën 1950, 329, fig. 11.
Solid section, small terminal. Secondary burial in barrow 47.

Netherlands

2. De Hamert, Venlo, Limburg.
Holwerda n.d. 8, Abb. 24, 35.
3. Weert, Limburg.
Comhaire 1894-95, pl. IX, 94-98.
Five examples, four complete, one fragmentary.

LIST 254. Conical pendants.

Belgium

1. Achel-Pastoorsbos, Limburg.
Beex and Roosens 1967, 15, 24, aff. 11, 4.
Several examples. Burial 38a.

2. De Roosen, Neerpelt, Limburg.
Roosens and Beex 1961, 14, afb. 3, 4.
Several examples. Barrow 56.
3. De Roosen, Neerpelt, Limburg.
Ibid., 19, afb. 5, 5.
Several examples. Barrow 72.
4. De Roosen, Neerpelt, Limburg.
Ibid., 25, afb. 7, 2.
Several examples. Barrow 93.
5. Overpelt, Limburg.
Beex and Roosens 1967, 16.

Netherlands

6. Best, N. Brabant.
Verwers 1972, 140.
Ten examples.
7. Luiksgestel, N. Brabant.
De Loë 1931a, 79-81, fig. 22.
Fifteen examples.
8. Bennekom, Gelderland.
Bursch 1933, 36, afb. 34.
Barrow 27.

LIST 255. Curved-bow brooches, bow slightly swollen.

Britain

1. Little Chester, Derby, Derbys.
Haverfield 1905, 217, fig. 24.
Ribbed bow, catch-plate broken off.
2. Icklingham, Suffolk.
Clarke 1939, 31, fig. 6, 1.
Decorated bow, short catch-plate.
3. Ixworth, Suffolk.
Ridgeway and Smith 1905-07, 114, figs. 24-25.
Two examples, transverse bands of ornament on bows, elongated catch-plates.
4. Near York, Yorks.
Hawkes 1932, 453-454, fig. 1.
Bands of chevron ornament on bow, short catch-plate.

North-eastern France

5. Vieux-Port, Eure.
Duval, Eluère and Mohen 1974, 11, 51, fig. 5, 5.
Plain bow, broken catch-plate probably short.

6. Bavai, Nord.
Ibid., 13, 55, fig. 7, 2; Mohen 1972, 463, fig. 10, 10.
Ribbed bow, spiral disc-shaped catch-plate.
7. Amiens, Somme.
Ash 1927, 487.
Fig. 75, 11.
Solid bow, long catch-plate with upright terminal.

Netherlands

8. Nijmegen, Gelderland.
Van Buchem 1941, 68 no. 1, pl. I, 1.
Semi-circular catch-plate.

LIST 256. Curved-bow brooches, bow slightly swollen, long catch-plate.

North-eastern France

1. Forest of Compiègne, Oise.
Lambot 1975, 18 no. 5, fig. 1.
Undecorated bow.

LIST 257. Curved-bow brooches, bow swollen, short catch-plate.

Britain

1. Bitterne, Hants.
Waterman 1944-47.
Bands of transverse lines and ring-and-dot motifs on bow.
2. Kingham, Oxon.
Harding 1972, 75, pl. 74A.
Three ducks' heads on bow which also bears transverse and longitudinal ornament.
3. Clayton, Sussex.
Curwen 1954, fig. 66.
Bands of transverse lines on bow.
4. Box, Wilts.
Smith 1925, 93, fig. 92.
Elaborate grooved and ring-and-dot ornament on bow.
5. Near York, Yorks.
Hawkes 1932, 453-454, fig. 2.
Transverse lines, oblique lines and ring-and-dot on bow, catch-plate broken off.

North-eastern France

6. Chateau Roland, Iwuy, Nord.
Felix 1968, 60.
7. Mont Berny, La Queue Saint-Etienne, Forest of Compiègne, Oise.
Lambot 1975, 18 no. 4, fig. 1, 4.
Transverse line ornament on bow.

8. Seine at Paris.
Duval, Eluère and Mohen 1974, 57, fig. 8, 11.
Bands of chevron ornament on bow, broken catch-plate probably short.
9. Seine at Paris.
Ibid., 17, 57, fig. 9, 2.
Bands of transverse and longitudinal ornament on bow.
10. Amiens, Somme.
Ibid., 15, 57, fig. 8, 1.
Undecorated bow.
11. Amiens, Somme.
Ibid., 17, 57, fig. 9, 7.
Transverse and longitudinal ornament on bow.
12. ? Somme.
Ibid., 58.
Two examples.

Netherlands

13. Nijmegen, Gelderland.
Van Buchem 1941, 68 no. 3, pl. I, 5.
14. Nijmegen, Gelderland.
Ibid., no. 7, pl. I, 7.
Transverse lines on bow.
15. Nijmegen, Gelderland.
Ibid., no. 8, pl. I, 6.

LIST 258. Curved-bow brooches, bow swollen, long catch-plate.

Britain

1. Battle Farm, Reading, Berks.
VCH Berkshire, I, 223, fig. 1.
Transverse, longitudinal and chevron ornament on bow.
2. Queen Victoria Street, City of London.
Waddington 1933, 386, fig. 8a.
3. Taunton, Somerset.
Kendrick and Hawkes 1932, 169, pl. XVII, 1.
Elaborate groove and ring-and-dot ornament on bow.
4. Ixworth, Suffolk.
Ridgeway and Smith 1905-07, 101, fig. 4.
Undecorated bow.
5. Ixworth, Suffolk.
Ibid., 101, fig. 5.
Transverse, longitudinal and diagonal grooves on bow.
6. Clayton, Sussex.
Couchman 1918-19, 116, fig. 6.
Bands of transverse lines on bow.

North-eastern France

7. Seine at Paris.
Duval, Eluère and Mohen 1974, 57, fig. 13, 1.
Transverse and longitudinal bands of lines and large chevrons on bow.
8. Amiens, Somme.
Ibid., 24, 57, fig. 12, 13.
Five zones of ornament on bow.
9. Amiens, Somme.
Ibid., 24, 57, fig. 13, 2.
Transverse lines and chevrons on bow.
10. Amiens, Somme.
Ibid., 24, 57, fig. 13, 4.
Chevrons on bow.
11. Amiens, Somme.
Ibid., 24, 57, fig. 14, 6.
Transverse and oblique lines on bow.
12. Faubourg, Amiens, Somme.
Ibid., 24, 57, figs. 15; 29, 6.
Bands of transverse and longitudinal chevron ornament on bow.
13. Beauvais Museum.
Ibid., 24, 55, fig. 13, 8.
Transverse, longitudinal and chevron lines and ring-and-dot on bow.
14. Beauvais Museum.
Ibid., 24, 55, fig. 14, 7.
Transverse and longitudinal line ornament on bow.

Belgium

15. Incourt, Brabant.
Mariën 1958, 231, fig. 45, 1.
Five zones of ornament on bow.

Netherlands

16. Rotterdam Museum.
Ypey 1967, 101,afb. 4, 0 35.
Transverse lines and chevron ornament on bow, catch-plate broken off.
Probably from Belgium or northern France.

LIST 259. Curved-bow brooches, swollen bow formed of discs, disc-shaped catch-plate.

Britain

1. Alton, Hants.
Ridgeway and Smith 1905-07, 104, fig. 6.
Decorated catch-plate.

LIST 260. Curved-bow brooches, swollen lozenge-shaped bow, long catch-plate.

Britain.

1. Hod Hill, Stourpaine, Dorset.
Smith 1925, 93, fig. 93.
Narrow and short with lateral knobs on bow.
2. Boughton Monchelsea, Kent.
Ridgeway and Smith 1905-07, 113, fig. 21.
Lateral knobs on bow.
3. Sutton Valence, Kent.
Kelly 1973, 208-209, fig. 4.
Transverse band on bow with criss-cross incised ornament.
4. Between Cocking and Bignor, Sussex.
Couchman 1924.
Lateral knobs on bow.
5. North Wraxall, Wilts.
Goddard 1907-08, 394, fig. 1.
Transverse and longitudinal grooves on bow.
6. Boroughbridge, Yorks.
Collinge 1954.
Longitudinal facets on bow.

North-eastern France

7. Bavai, Nord.
Duval, Eluère and Mohen 1974, 28, 55, fig. 16, 8.
Lateral projections on bow.
8. Forest of Compiègne, Oise.
Lambot 1975, 18 nos. 2-3, fig. 1, 2-3.
Two examples, lateral knobs on bows.
9. Seine at Paris.
Duval, Eluère and Mohen 1974, 28, 57, fig. 16, 1.
Transverse and longitudinal line ornament on bow.
10. Seine at Paris.
Ibid., 28, 57, fig. 17, 5.
Lateral knobs on bow.
11. Picardy.
Ibid., 28, 57, fig. 16, 3.
Transverse and longitudinal ornament and ring-and-dot on bow.
12. Beauvais Museum.
Ibid., 28, 55, fig. 16, 10.
Lateral knobs on bow.

Netherlands

13. Rotterdam Museum.
Ypey 1967, 101, aff. 4, 0 116.
Transverse and longitudinal line ornament on bow with lateral projections.

LIST 261. Serpentiform brooches.

Britain

1. Alton, Hants.
Ridgeway and Smith 1905-07, 104, fig. 7.
Flat bow with lateral projections.
2. Berkhamstead Castle, Herts.
Branigan 1974-76, pl. 48, right.
Terminal broken, bow deformed.
3. Water Newton, Northants.
Harden 1952, 318, fig. 3.
Lateral knobs on bow.
4. Water Newton, Northants.
Fox 1923, 75, fig. 1, I.
Lateral knobs on bow.
5. Water Newton, Northants.
Ibid., fig. 1, II.
Wire bow with multiple spirals, disc-shaped catch-plate.
6. Felixstowe, Suffolk.
Clarke 1939, 31, fig. 6, 3.
7. Between Cocking and Bignor, Sussex.
Couchman 1924.
Double swelling on bow, catch-plate with spiral terminal.

North-eastern France

8. Ciry-Salsogne, Aisne.
Moreau 1891, pl. 127, 7.
Iron, biconical collar on bow, long foot.
9. Amiens. Somme.
Duval, Eluère and Mohen 1974, 36, 57, fig. 22, 5.
Lateral projections on bow.
10. Nord.
Ibid., 38, 55, fig. 22, 6.
Lateral projections on bow.

LIST 262. Spiral brooches.

Britain

1. Colchester, Essex.
Ridgeway and Smith 1905-07, 108, fig. 9.
Double spiral.

2. London.
Ibid., 106, fig. 8.
Quadruple spiral.
3. Ixworth, Suffolk.
Ibid., 108, fig. 10.
One spiral of a quadruple-spiral brooch.

North-eastern France

4. Bavai, Nord.
Mohen 1972, 463, fig. 10, 9; Duval, Eluère and Mohen 1974, 7, 55,
fig. 3, 5.
Two spirals of a quadruple-spiral brooch.

Netherlands

5. Nijmegen, Gelderland.
Van Buchem 1941, 68 nos. 9-11, pl. I, 8-10.
Three examples, two quadruple, one double.

LIST 263. Wiesloch razors. MAP 81.

Belgium

1. Havre, Hainaut.
Mariën 1958, 139.
Probable example. Burial 16.
2. Eprave, Namur.
Musée Archeologique, Namur; cast in University Museum, Ghent.
Comhaire 1894-95, pl. V, 58.
Fig. 76, 1.
3. Fosse-aux-Morts, Gedinne, Namur.
Dujardin and Gravet 1865-66, 43; Mariën 1952, 288,afb. 269.
The provenance 'Louette-Saint-Pierre' is incorrect (Knapen-Lescrenier
1970, 111).
On ground-surface below barrow 5.
4. Prov. Namur.
Cast in University Museum, Ghent.
Fig. 76, 2.

LIST 264. Endingen razors. MAP 81.

England

1. Hills Road, Cambridge, Cambs.
Fell, Lethbridge and Bushnell 1948, 128, pl. XIV, H.
2. Danebury hoard, Hants.
Cunliffe and O'Connor 1979.
Fig. 76, 3.
3. Thames at Sion Reach, Middlesex.
Brailsford 1953, 30, fig. 11, 13.

4. Ham Hill, Somerset.
Piggott 1946, 140 no. 91, fig. 8.
5. South Cadbury, Somerset.
Alcock 1971, 5, pl. IV, c.
6. Thames at Richmond, Surrey.
Piggott 1946, 140 no. 92, fig. 8; Brailsford 1953, 30, fig. 11, 12.

Scotland

7. Traprain Law, E. Lothian.
Burley 1955-56, 150, fig. 1, T27.

Belgium

8. Bruyère-Saint-Job, Basse-Wavre, Brabant.
Mariën 1958, 210-213, fig. 38, d.
Burial 5.
9. Scheldt at Schoonaarde, E. Flanders.
De Loë 1931b, 6, fig. 9, 3.
Three rings.

LIST 265. Flörsheim razors. MAP 81.

North-eastern France

1. Seine above Villeneuve-Saint-Georges, Val-de-Marne.
MAN; cast in University Museum, Ghent.
De Mortillet 1903, pl. C, 1343.
Fig. 76, 4.

LIST 266. Bernissart razors. MAP 81.

England

1. Staple Howe, Yorks.
Brewster 1963, 111, fig. 61, 1, pl. 40.

Belgium

2. Bernissart, Hainaut.
Ash 1927.1021.
Mariën 1958, 234.
Fig. 76, 5.
3. Fosse-aux-Morts, Gedinne, Namur.
Dujardin and Gravet 1865-66, 42.
Possible example.

LIST 267. Triangular-bladed razors. MAP 82.

Wales

1. Cardiff hoard, Glamorgan (217).
2. Llyn Fawr hoard, Glamorgan (218).

LIST 268. Circular-bladed razors. MAP 82.

Britain

1. Danebury hoard, Hants.
Drawn while in Salisbury and South Wiltshire Museum, Salisbury;
now in private collection.
Salisbury and South Wiltshire Museum, Annual Report, 1973-74, 18,
pl. IIA; Cunliffe and O'Connor 1979.
Fig. 76, 6.
Trefoil openwork blade, ring-terminal on handle.
2. Cardiff hoard, Glamorgan (217).
3. Putney, Middlesex.
Piggott 1946, 140 no. 89, fig. 8.
Circular and triangular perforations.

Belgium

4. Court-Saint-Etienne, Brabant.
Mariën 1958, 139-140 no. 133, 266, fig. 24.
Champ de la Ferme Rouge, barrow 5. Bifid blade, circular perforation,
inset tang.
5. Court-Saint-Etienne, Brabant.
Ibid., 144 no. 142, fig. 10; 146 no. 151, fig. 25.
From the Champ de la Ferme Rouge barrow cemetery. Two fragments,
one bifid blade, one handle with ring-terminal.
6. Havre, Hainaut.
Ibid., 139.
Burial 9. Bifid blade, circular perforation, ring-terminal handle.
7. Havre, Hainaut.
Ibid., 234.
Burial 16. Bifid, tanged.
8. Fosse-aux-Morts, Gedinne, Namur.
Dujardin and Gravet 1865-66, 40.
Irregular circular perforation. Below barrow 1.

LIST 269. Iron razors. MAP 82.

Wales

1. Dinorben, Denbigh.
Gardner and Savory 1964, 60, 77, 153-154, fig. 233; Savory 1976a, 20.
Single-edged, long blade with straight sides tapering towards a knobbed
tang.

Belgium

2. Morimoine, Brabant.
Mariën 1958, 223 no. 1, fig. 43.
Barrow 2. Crescentic.

3. Lommel-Kattenbosch, Limburg.
De Laet and Mariën 1950, 322, fig. 6, 20; Inv. Arch. B4, 5.
Burial 20. Single-edged trapezoidal blade with convex edge.
4. Saint-Vincent, Luxembourg.
Mariën 1964, 104, 156, fig. 81.
Burial 67. Single-edged convex blade with recurved handle.

LIST 270. Miscellaneous razors.

Britain

1. Kinleith, Midlothian.
Piggott 1946, 141 no. 97, fig. 8.
Bifid blade with crescentic openwork, ring-terminal on handle.
2. Staple Howe, Yorks.
BM.
Brewster 1963, 113, fig. 61, 3.
Fig. 76, 7.
Fragment with openwork ornament. Broken or worn edges are stippled.

BIBLIOGRAPHY

ABBREVIATIONS

AAASH.	Acta Archaeologica Academiae Scientiarum Hungaricae.
Acta Arch.	Acta Archaeologica.
AFSB.	Arbeits- und Forschungsberichte zur Sachsischen Bodendenkmalpflege.
Ann. Bret.	Annales de Bretagne et des Pays de l'Ouest.
Ant. J.	The Antiquaries Journal.
Ant. Nat.	Antiquités Nationales.
APL.	Analecta Praehistorica Leidensia.
Arch. Ael.	Archaeologia Aeliana.
Arch. Atlant.	Archaeologia Atlantica.
Arch. Belg.	Archaeologica Belgica.
Arch. Camb.	Archaeologia Cambrensis.
Arch. J.	The Archaeological Journal.
Arch. Korr.	Archäologisches Korrespondenzblatt.
Arch. Rozh.	Archeologicke Rozhledy.
Ausgrabungen in Deutschland.	Ausgrabungen in Deutschland. Römisch-Germanischen Zentral Museum. Monographien 1. Mainz. 1975.
Bad. Fundber.	Badische Fundberichte.
BAR	British Archaeological Reports.
BJ.	Bonner Jahrbücher.
BMRAH.	Bulletin des Musées Royaux d'Art et d'Histoire.
BPH.	Biblioteca Praehistorica Hispāna.
BRGK.	Bericht der Römisch-Germanischen Kommission.
BROB.	Berichten van de Rijksdienst voor het Oudheidkundige Bodemonderzoek.
BSPF.	Bulletin de la Société Préhistorique Française.
CAP.	Cahiers Archéologique de Picardie.

DAG.	Dissertationes Archaeologicae Gandenses.
Gallia Prehist.	Gallia Préhistoire.
HBA.	Hamburger Beiträge zur Archäologie.
HMGOG.	Handelingen der Maatschappij voor Geschiedenis en Oudheidkunde te Gent.
Inv. Arch.	Inventaria Archaeologica.
JCHAS.	Journal of the Cork Historical and Archaeological Society.
JIVUF.	Jahresbericht des Instituts für Vorgeschichte der Universität Frankfurt a. M.
JRGZM.	Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz.
JRSAI.	Journal of the Royal Society of Antiquaries of Ireland.
JSGU.	Jahrbuch der Schweizerischen Gesellschaft für Urgeschichte.
L'Ant. Class.	L'Antiquité Classique.
MBV.	Materialhefte zur Bayerischen Vorgeschichte.
MBVF.	Münchner Beiträge zur Vor- und Frühgeschichte.
MSPF.	Memoires de la Société Préhistorique Française.
NDV.	Nieuwe Drentse Volksalmanak.
NNU.	Nachrichten aus Niedersachsens Urgeschichte.
OMROL.	Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden.
Pam. Arch.	Pamatky Archeologicke.
PBF.	Prähistorische Bronzefunde.
PDNHAS.	Proceedings of the Dorset Natural History and Archaeological Society.
PHFC.	Proceedings of the Hampshire Field Club and Archaeological Society.
PPS(EA).	Proceedings of the Prehistoric Society (of East Anglia).
PRIA.	Proceedings of the Royal Irish Academy.
PSAL.	Proceedings of the Society of Antiquaries of London,
PSAS.	Proceedings of the Society of Antiquaries of Scotland.

PUBSS.	Proceedings of the University of Bristol Spelaeological Society.
PZ.	Prähistorische Zeitschrift.
RAC.	Revue Archéologique du Centre.
RAECE.	Revue Archéologique de l'Est et du Centre-Est.
RAO.	Revue Archéologique de l'Oise.
Rev. Arch.	Revue Archéologique.
RGF.	Römisch-Germanische Forschungen.
RVM.	Rad Vojvocanskih Muzeja.
Settlement and Economy.	Settlement and economy in the third and second millennia B.C. ed. C. Burgess and R. Miket. BAR 33. Oxford. 1976.
Sx. A. C.	Sussex Archaeological Collections.
Sy. A. C.	Surrey Archaeological Collections.
TCWAAS.	Transactions of the Cumberland and Westmor- land Antiquarian and Archaeological Society.
TEAS.	Transactions of the Essex Archaeological Society.
Travaux ... Rennes.	Travaux du Laboratoire d'Anthropologie ... Faculté des Sciences, Rennes.
UFAS.	Ur-und frühgeschichtliche Archäologie der Schweiz. 3 Die Bronzezeit. ed. W. Drack. Basel. 1971.
UJA.	Ulster Journal of Archaeology.
ULIA.	University of London Institute of Archaeology.
VCH.	The Victoria History of the Counties of England.
VF.	Vorgeschichtliche Forschungen.
VUSLH.	Veröffentlichungen der urgeschichtlichen Sammlungen des Landesmuseums zu Hannover.
WA.	World Archaeology.
WAM.	The Wiltshire Archaeological and Natural History Magazine.
YAJ.	The Yorkshire Archaeological Journal.
BM Festschrift.	Prehistoric and Roman studies commemorating the opening of the Department of Prehistoric and Romano-British Antiquities. ed. G. de G. Sieveking. London. 1971. = British Museum Quarterly 35.

- Brunsting Festschrift. Archeologie en historie: opgedragen aan H. Brunsting bij zijn zeventigste verjaardag. ed. W. A. van Es et al. Bussum. 1973.
- Chitty Festschrift. Prehistoric man in Wales and the west: essays in honour of Lily F. Chitty. ed. F. Lynch and C. Burgess. Bath. 1972.
- Dehn Festschrift. Marburger Beiträge zur Archäologie der Kelten: Festschrift für Wolfgang Dehn. ed. O.-H. Frey. Fundberichte aus Hessen, Beiheft 1. Bonn. 1969.
- Hawkes Festschrift. The European community in later prehistory: studies in honour of C. F. C. Hawkes. ed. J. Boardman, M. A. Brown and T. G. E. Powell. London. 1971.
- Montelius Festschrift. Opuscula Archaeologica Oscari Montelio Septuagenario Dicata. Holmiae. 1913.
- Piggott Festschrift. To illustrate the monuments: essays on archaeology presented to Stuart Piggott. ed. J. V. S. Megaw. London. 1976.
- Vogt Festschrift. Helvetia Antiqua: Festschrift Emil Vogt. ed. R. Degen, W. Drack and R. Wyss. Zürich. 1966.

- Aberg, N., 1916. 'Die nackengebogenen Axte und die Rhombenäxte'. PZ 8, 93-108.
- Abauzit, P., 1967. 'L'Age du Bronze en Bourbonnais: les haches à talon'. RAC 6, 339-359.
- Abels, B. -U., 1972. Die Randleistenbeile in Baden-Württemberg, dem Elsass, der Franche Comté und der Schweiz. PBF IX/4. München.
- Abels, B. -U., 1975. 'Ein urnenfelderzeitlicher Grabfund aus Herlheim, Ldkr. Schweinfurt'. Arch. Korr. 5, 27-34.
- Abercromby, J., 1912. A study of the Bronze Age pottery of Great Britain and Ireland. Oxford.
- Achertop, S. H., 1961. 'Een stenen strijdhammer uit Muntendam (Gr.)'. Helinium 1, 132-134.
- Agache, R., 1974. 'Informations archéologiques. Circonscription de Nord et Picardie'. Gallia Préhist. 17, 425-463.
- Alcock, L., 1961. 'The winged objects in the Llyn Fawr hoard'. Antiquity 35, 149-151.
- Alcock, L., 1971. 'Excavations at South Cadbury 1970'. Ant. J. 51, 1-7.
- Alenus-Lecerf, J., 1974. Sondages dans un champ d'urnes à Herstal. Arch. Belg. 157. Bruxelles.
- Almagro, M., 1940. 'El hallazgo de la ría de Huelva y el final de la Edad del Bronce en el Occidente de Europa'. Ampurias 2, 85-143.
- Almagro, M., 1957-58. 'A propósito de la fecha de las fíbulas de Huelva'. Ampurias 19-20, 198-207.
- Almagro, M., 1966. Las estelas decoradas del suroeste peninsular. BPH 8. Madrid.
- Almagro, M., 1974. 'Depósito de bronces de la Ría de Huelva'. In, Huelva: prehistoria y antigüedad. Madrid, 213-220.
- Althin, C. -A., 1945. Studien zuden bronzezeitlichen Felszeichnungen von Skane. Lund/København.
- Anderson, J., 1886. Scotland in pagan times. The Bronze and Stone Ages. Edinburgh.
- Aner, E., 1962. 'Die frühen Tullenbeile des Nordischen Kreises'. Acta Arch. 33, 165-219.
- Aner, E. and Kersten, K., 1973. Frederiksborg und Københavns Amt. Die Funde der älteren Bronzezeit des Nordischen Kreises in Dänemark, Schleswig-Holstein und Niedersachsen 1. København/Neumünster.
- Aner, E. and Kersten, K., 1976. Holbaek, Sorø und Praestø Amter. Die Funde der älteren Bronzezeit des Nordischen Kreises in Dänemark, Schleswig-Holstein und Niedersachsen 2. København/Neumünster.
- Ankel, C., 1974. 'Bronzeschwerter am Niederrhein'. In, Ausgrabungen am Niederrhein, ed. R. Stampfuss. Quellenschriften zur westdeutschen Vor- und Frühgeschichte 9. Bonn, 41-52.

- Annable, F. K. and Simpson, D. D. A., 1964. Guide catalogue of the Neolithic and Bronze Age collections in Devizes Museum. Devizes.
- Anon. 1905. L'Anthropologie 16, 371.
- Anon. 1923. 'A Danish bronze celt in England'. Ant. J. 3, 370-371.
- Anon. 1928. 'Bronze ring found at Passage West'. JCHAS 33, 34.
- Anon. 1934. 'Scarborough and Hallstatt'. Ant. J. 14, 301-302.
- Anon. 1963. 'Tredarvah, Penzance'. Cornish Archaeology 3, 85.
- Antoniewicz, W., 1955. 'Bronze axes of the Mälar type found in Minsk (White Russia)'. Wiadomosci Archeologiczne 22, 278-283.
- ApSimon, A. M., 1954. 'Dagger graves in the "Wessex" Bronze Age'. ULIA Tenth Annual Report, 37-62.
- ApSimon, A. M., 1969-71. '1919-1969: Fifty years of archaeological research. The Spelaeological Society's contribution to archaeology'. PUBSS 12, 31-56.
- ApSimon, A. M., 1972. 'Biconical urns outside Wessex'. In, Chitty Festschrift, 141-160.
- ApSimon, A. M. and Greenfield, E., 1972. 'The excavation of Bronze Age and Iron Age settlements at Trevisker, St. Eval, Cornwall'. PPS 38, 302-381.
- Armstrong, E. C. R., 1911. 'A bronze bracelet of Hallstatt type said to have been found near the town of Antrim'. JRSAI 49, 58-60.
- Armstrong, E. C. R., 1920. Catalogue of Irish gold ornaments in the collection of the Royal Irish Academy. Dublin.
- Arnal, J., Couchard, J. L. and Lorblanchet, M., 1969. 'La grotte de Roucadour (Thémines-Lot)'. Archivo de Prehistoria Levantina 12, 55-91.
- Aschemeyer, H., 1966. Die Gräber der jüngeren Bronzezeit im westlichen Westfalen. Bodenaltertümer Westfalens 9. Münster.
- Ashbee, P., 1960. The Bronze Age round barrow in Britain. London.
- Atkinson, R. J. C., 1965. 'Wayland's Smithy'. Antiquity 39, 126-133.
- Audouze, F., 1971. 'Un type d'épingle rare: les épingles à tête sub-biconique à décor en étoile'. BSPF 68, 189-192.
- Audouze, F., 1972. 'Une épée du type d'Hemigkofen trouvée près de Creil (Oise)'. BSPF 69, 264-265.
- Audouze, F., 1974. 'Les ceintures et ornements de ceinture de l'Age du Bronze en France'. Gallia Préhist. 17, 219-283.
- Audouze, F., 1976. 'Les ceintures ... (suite)'. Gallia Préhist. 19, 69-172.
- Audouze, F. and Courtois, J. -C., 1970. Les épingles du sud-est de la France. PBF XII/1. München.
- Audouze, F., Jorrand, C. and J. P., Marquis, P. and Mommelé, R., 1975. 'L'habitat protohistorique de Néry'. RAO 5, 11-14.

- Aufdermauer, J., 1963. Ein Grabhügelfeld der Hallstattzeit bei Mauenheim. Bad. Fundber. Sonderheft 3. Freiburg i. Br.
- Avery, M., 1974. Review of Cunliffe 1974. Irish Archaeological Research Forum 1, 59-64.
- Avery, M., Sutton, J. E. G. and Banks, J. W., 1967. 'Rainsborough, Northants, England: excavations 1961-5'. PSS 33, 207-306.
- Babes, M., 1974. Die relative Chronologie des späthallstattzeitlichen Gräberfeldes von Les Jogasses, Gemeinde Chouilly (Marne). Saarbrücker Beiträge zur Altertumskunde 13. Bonn.
- Bailloud, G., 1956. 'Recherches au camp de Catenoy (Oise)'. BSPF 53, 570-574.
- Bailloud, G., 1958. 'L'habitat néolithique et protohistorique des Roches'. MSPF 5, 192-214.
- Bailloud, G., 1961. 'Un habitat du Bronze moyen en forêt de Fontainebleau: Marion des Roches'. BSPF 58, 99-102.
- Bailloud, G., 1974. Le néolithique dans le Bassin parisien². IIe supplément à Gallia Préhist. Paris.
- Bailloud, G. and Coiffard, P., 1967. 'Le locus 5 des Roches à Videlles (Essonne). I étude archéologique'. BSPF 64, 371-410.
- Bakels, C. C., 1975. 'Pollenspectra from the Late Bronze Age urnfield at Hilvarenbeek-Laag Spul, prov. Noord-Brabant, Netherlands'. APL 8, 45-51.
- Balkwill, C. J., 1973. 'The earliest horse-bits of western Europe'. PPS 39, 425-452.
- Banks, R. W., 1884. 'An account of bronze implements found near Brecon'. Arch. Camb. 35, 225-227.
- Barrett, J., 1976. 'Deverel-Rimbury: problems of chronology and interpretation'. In, Settlement and Economy, 289-307.
- Barth, F. E. and Hodson, F. R., 1976. 'The Hallstatt cemetery and its documentation: some new evidence'. Ant. J. 56, 159-176.
- Barton, K. J., 1963. 'Worthing Museum archaeological notes for 1961'. Sx. A. C. 101, 20-34.
- Baudou, E., 1960. Die regionale und chronologische Einteilung der jüngeren Bronzezeit im Nordischen Kreis. Acta Universitatis Stockholmiensis. Studies in North-European Archaeology 1. Stockholm/Göteborg/Uppsala.
- La Baume, W., 1934. Urgeschichte der Ostgermanen. Ostland-Forschungen 5. Danzig.
- Bauwens-Lesenne, M., 1962. Bibliografisch repertorium der oudheidkundige vondsten in Oostvlaanderen. Oudheidkundige Repertoria, Reeks A, 2.

- Bauwens-Lesenne, M., 1963. Bibliografisch ... Westvlaanderen. Oudheidkundige Repertoria, Reeks A, 4. Brussel.
- Bauwens-Lesenne, M., 1965. Bibliografisch ... de provincie Antwerpen. Oudheidkundige Repertoria, Reeks A, 6.
- Bauwens-Lesenne, M., 1968. Bibliografisch ... Limburg, behoudens Tongeren-Koninksem. Oudheidkundige Repertoria, Reeks A, 8. Brussel.
- de Beauchêne, G., 1961. 'Enclume, poignards et épées de l'Age du Bronze'. Objets et Mondes 1, 58-61.
- Beaumont, G. F. and Gould, I. C., 1903. 'Early man'. In, VCH Essex 1. London, 261-274.
- Becker, C. J., 1961. Førromerskjernalder i syd- og midtjylland. Nationalmuseets Skrifter. Større Beretninger 6. København.
- Becker, C. J., 1967. 'Frühbronzezeitliche Lanzenspitzen von Fünen, Dänemark'. Acta Arch. 38, 215-222.
- Beex, G., 1964. 'Ringwalheuvel te Alphen, prov. Noord-Brabant'. BROB 14, 53-65.
- Beex, G. and Hulst, R. S., 1968. 'A Hilversum-culture settlement near Nijnsel, municipality of St Oedenrode, North Brabant'. BROB 18, 117-129.
- Beex, G. and Roosens, H., 1961. 'Een grafmonument in het urnenveld "De Roosen" te Neerpelt (Belgisch Limburg)'. Helinium 1, 135-137.
- Beex, G. and Roosens, H., 1967. Een urnenveld te Achel-Pastoorbos. Arch. Belg. 96. Brussel.
- Behrens, G., 1916. Bronzezeit Süddeutschlands. Kataloge des Römisch-Germanisches Central-Museums 6. Mainz.
- Behrens, G., 1917. 'Ein bronzezeitliches Gefäß aus Frankreich im Museum zu Wiesbaden'. Germania 1, 26-28.
- Benoît, F., 1956. 'Relations de Marseille grecque avec le monde occidental'. Rivista di Studi Liguri 22, 5-32.
- Benton, S., 1930-31. 'The excavation of the Sculptor's Cave, Covesea, Morayshire'. PSAS 65, 177-216.
- Bergmann, J., 1958. 'Entwicklung und Verbreitung der Paukenfibel'. JRGZM 5, 18-93.
- Bergmann, J., 1970. Die ältere Bronzezeit Nordwestdeutschlands. Kasseler Beiträge zur Vor- und Frühgeschichte 2. Marburg.
- Betzler, P., 1974. Die Fibeln in Süddeutschland, Österreich und der Schweiz I. PBF XIV/3. München.
- Bianco Peroni, V., 1970. Die Schwerter in Italien. PBF IV/1. München.
- den Biesen, W. P., 1963. 'Het oudheidkundige museum Frans Bloemen'. Numaga 10, 41-76.

- Blanchet, J. -C., 1973. 'Objets de l'Age du Bronze dans les collections privées à Compiègne (Oise)'. RAO 3, 45-57.
- Blanchet, J. -C., 1975a. 'L'épingle en bronze de Breuil-le-Sec'. RAO 5, 20-21.
- Blanchet, J. -C., 1975b. Le peuplement de la moyenne vallée de l'Oise à l'Age du Bronze. École Pratique des Hautes Études, VIe Section.
- Blanchet, J. -C., 1976a. 'L'Age du Bronze en Picardie'. RAO 7, 29-42.
- Blanchet, J. -C., 1976b. 'Les tumulus des Combles d'Eramécourt (Somme)'. CAP 3, 39-55.
- Blanchet, J. -C., Jouve, M. and Durvin, P., 1976. 'Le premier Age du Fer en Picardie'. RAO 7, 43-47.
- Blanchet, J. -C., and Lambot, B., 1975. 'L'Age du Bronze dans les musées de l'Oise'. CAP 2/1, 25-70.
- Blanchet, J. -C. and Marquis, P., 1977. 'Deux haches du Bronze final au Bois d'Ageux à Longueil-Sainte-Marie (Oise)'. RAO 9, 6-7.
- Blanchet, J. -C. and Mohen, J. -P., 1977. 'Le dépôt du Bronze final de Saint-Just-en-Chaussée (Oise)'. BSPF 74, 472-481.
- Blanchet, J. -C. and Samadet, A., 1975. 'Un ciseau à douille et une armille en bronze trouvés à Villers-sur-Coudon (Oise)'. RAO 6, 18-19.
- Blin-Stoyle, A., 1959. 'Spectrographic analysis of British Middle and Late Bronze Age finds'. Archaeometry 2, supplement.
- Bloemers, J. H. F., 1973. 'Archeologische kroniek van Limburg over de jaren 1971-1972'. Publications de la Société Historique et Archéologique dans le Limbourg 109, 7-55.
- Bloemers, J. H. F., 1975. 'Archeologische kroniek van Limburg over de jaren 1973-1974'. Publications de la Société Historique et Archéologique dans le Limbourg 111, 7-51.
- Bocksberger, O. -J., 1964. Age du Bronze en Valais et dans le Chablais Vaudois. Lausanne.
- Bocquet, A., 1969. 'L'Isère préhistorique et protohistorique'. Gallia Pré-hist. 12, 121-258, 273-400.
- Bocquet, A., 1976. 'Les civilisations de l'Age du Bronze dans les Alpes'. In, Guilaine 1976a, 483-494.
- Boeles, P. C. J. A., 1951. Friesland tot de elfde eeuw². 's-Gravenhage.
- den Boersted, H. P. A., 1956. The bronze vessels. Description of the collections in the Rijksmuseum G. M. Kam at Nijmegen 5. Nijmegen.
- Böhme, H. W., 1974. Germanische Grabfunde des 4. bis 5. Jahrhunderts zwischen unterer Elbe und Loire. MBVF 19. München.
- Bóna, I., 1960. 'Clay models of Bronze Age wagons and wheels in the Middle Danube basin'. AAASH 12, 83-111.

- Bóna, I., 1975. Die mittlere Bronzezeit Ungarns und ihre südöstlichen Beziehungen. Archaeologia Hungarica 49, Budapest.
- Bonenfant, P. P., 1975. 'Les relations entre habitat et nécropole en Belgique à l'Age du Fer: un problem à poser'. In, L'habitat et la nécropole à l'Age du Fer en Europe occidentale et centrale, ed. P. -M. Duval and V. Kruta. Bibliothèque de l'Ecole des Hautes Études, IVe Section, 323. Paris, 61-69.
- Bonifay, E., 1967. 'Informations archéologiques. Circonscription de Haute et Basse Normandie'. Gallia Préhist. 10, 317-331.
- Bonnamour, L., 1969. L'Age du Bronze au Musée de Chalon-sur-Saône. Chalon-sur-Saône.
- Bonnamour, L., 1976. 'Siedlungen der Spätbronzezeit (Bronze final III) im Saône-Tal südlich von Chalon-sur-Saône'. Arch. Korr. 6, 123-130.
- Bonnet, C., 1973. 'Une station d'altitude de l'époque des Champs d'Urnes au sommet du Hohlandsberg'. BSPF 70, 455-478.
- Bontillot, J. and Mordant, C., 1972. 'Quelques objets de l'Age du Bronze trouvés à Cannes-Ecluse (Seine-et-Marne)'. BSPF 69, 25-28.
- Bouloumié, B., 1973. 'Les oenochés en bronze du type Schnabelkanne en France et en Belgique'. Gallia 31, 1-35.
- Bourhis, J., Briard, J. and Esteoule, J., 1969. 'Un dépôt de la fin du Bronze moyen à Malassis, Commune de Chéry (Cher). II étude technique'. Gallia Préhist. 12, 75-82.
- Bouzek, J., 1967. 'Böhmen, Sachsen und Mitteldeutschland. Bemerkungen zur vergleichenden Chronologie der Urnenfelderzeit'. AFSB 16/17, 73-91.
- Bouzek, J., 1968. 'Eine Bemerkungen zum Beginn der Nipperwiese-Schilde'. Germania 46, 313-316.
- Bouzek, J., 1969. 'Sachsen, die Lausitzer Enklave nordwestböhmens und die Knovíz Kultur '. In, Beiträge zur Lausitzer Kultur, ed. W. Coblentz. AFSB Beiheft 7. Berlin, 31-39.
- Bouzek, J., 1974a. Graeco-Macedonian bronzes. Acta Universitatis Carolinae Philosophica et Historica Monographia 49. Praha.
- Bouzek, J., 1974b. 'Macedonian bronzes'. Pam. Arch. 64/2, 278-341.
- Bowen, H. C. n.d. (1961). Ancient fields. London.
- Braat, W. C., 1935. 'Een bronzen Hallstattsitula in het Rijksmuseum van Oudheden'. OMROL 16, 6-7.
- Braat, W. C., 1936. 'Een urnenveld te Knegsel (Gem. Vessem). OMROL 17, 38-46.
- Braat, W. C., 1964. 'Einige Baggerfunde aus Hollandischen Flüssen'. Bulletin van de Vereeniging tot Bevordering der Kennis van de Antieke Beschaving te 's-Gravenhage, 39, 185-191.

- Bradley, R., 1977-78. 'Prehistoric field systems in Britain and north-west Europe—a review of some recent work'. WA 9, 265-280.
- Bradley, R., 1978. The prehistoric settlement of Britain. London.
- Bradley, R. and Ellison, A., 1975. Rams Hill. BAR 19. Oxford.
- Bradshaw, J. and Coombs, D., n.d. The Stourmouth hoard. Typescript in Canterbury Museum.
- Brailsford, J., 1947. 'A founder's hoard from Dartford, Kent, with a note on socketed bronze swords'. PPS 13, 175-177.
- Brailsford, J., 1953. Later prehistoric antiquities of the British Isles. (British Museum). London.
- Brandt, K. H., 1973. 'Nackengebogene Axte vom nordwestdeutschen Typ'. Bremer Archäologische Blätter 6, 5-42.
- Branigan, K., 1964-76. 'A prehistoric brooch from Berkhamstead'. Hertfordshire Archaeology 4, 174-175.
- Bremer, W., 1926. 'A continental bracelet of the Hallstatt period found in Ireland'. JRSAI 56, 58-60.
- Bretz-Mahler, D., 1971. La civilisation de La Tène I en Champagne. 23e Supplément à Gallia. Paris.
- Breuil, H., 1900. 'L'Age du Bronze dans le Bassin de Paris. I. Les épées et dagues du Bassin de la Somme'. L'Anthropologie 11, 503-504.
- Breuil, H., 1901. 'L'Age du Bronze dans le Bassin de Paris. II. Poignards, couteaux, scies, racloirs, faucilles ...'. L'Anthropologie 12, 283-296.
- Breuil, H., 1902. 'L'Age du Bronze dans le Bassin de Paris. III. Objets de métallurgie et de menuiserie ...'. L'Anthropologie 13, 467-475.
- Breuil, H., 1903. 'L'Age du Bronze dans le Bassin de Paris. IV. Flèches et lances...'. L'Anthropologie 14, 501-518.
- Breuil, H., 1905. 'L'Age du Bronze dans le Bassin de Paris. V. Haches...'. L'Anthropologie 16, 149-171.
- Breuil, H., 1907. 'L'Age du Bronze dans le Bassin de Paris. VI. Ornaments de corps, accessoires de vetement, d'equipement et de harnachement...'. L'Anthropologie 18, 513-533.
- Breuil, H., 1918-19. 'L'Age du Bronze dans le Bassin de Paris. VI. (continued)'. L'Anthropologie 29, 251-264.
- Breuil, H. and Bouillerot, R., 1912. 'La cachette de l'Age du Bronze de Choussy, Loir-et-Cher'. Révue Préhistorique de l'Est de la France 5, 97-114.
- Brewis, W. P., 1922-23. 'The bronze sword in Great Britain'. Archaeologia 73, 253-265.
- Brewster, T. C. M., 1963. The excavation of Staple Howe. Malton.
- Briard, J., 1956. Le dépôt de fondeur de Tréboul en Douarnenez (Finistère). Travaux ... Rennes. Rennes.
- Briard, J., 1963. 'Pointes de lance de type Brittanique découvertes en Bretagne. Leur répartition en France'. L'Anthropologie 67, 571-578.

- Briard, J., 1965. Les dépôts bretons et l'Age du Bronze Atlantique. Travaux... Rennes. Rennes.
- Briard, J., 1966a. Dépôts de l'Age du Bronze de Bretagne. La Prairie de Mauves à Nantes. Travaux ... Rennes. Rennes.
- Briard, J., 1966b. 'Nouveaux dépôts des haches à talon découvertes en Bretagne'. BSPF 63, 565-582.
- Briard, J., 1970a. 'Un tumulus du Bronze ancien ... Kernonen en Plouvorn (Finistère)'. L'Anthropologie 74, 5-56.
- Briard, J., 1970b. 'Rennes à l'Age du Bronze'. Ann. Bret. 77, 11-35.
- Briard, J., 1971. 'Epées de Bretagne et d'ailleurs jetées dans les rivières à l'Age du Bronze'. Ann. Bret. 78, 47-58.
- Briard, J., 1975. 'Nouvelles découvertes sur les tumulus armoricains'. Arch. Atlant. 1, 17-32.
- Briard, J., 1976a. 'Les civilisations de l'Age du Bronze en Armorique'. In, Guilaine, 1976a, 561-574.
- Briard, J., 1976b. 'La paléoméallurgie en France'. In, Guilaine 1976a, 236-245.
- Briard, J., Cordier, G. and Gaucher, G., 1969. 'Un dépôt de la fin du Bronze moyen à Malassis, Commune de Chéry (Cher)'. I étude archéologique'. Gallia Préhist. 12, 37-73.
- Briard, J. and Giot, P.-R., 1958. Travaux... Rennes. Rennes.
- Briard, J. and Lecerf, Y., 1975. 'Parures de l'Age du Bronze: les braccets décorés d'Acigné et Pléchâtel (Ille-et-Vilaine)'. Ann. Bret. 82, 107-114.
- Briard, J. and Mohen, J. -P., 1976. 'Le dépôt du Bronze moyen de Duault (Côtes-du-Nord)'. Ant. Nat. 8, 28-37.
- Briard, J. and Onnée, Y., 1971. 'Pointes de lances et haches décorées du Bronze moyen à Pouldergat et Tréboul (Finistère)'. Ann. Bret. 78, 25-35.
- Briard, J. and Onnée, Y., 1972. Le dépôt du Bronze final de Saint-Brieuc-des-Iffs (I. et V.). Travaux ... Rennes. Rennes.
- Briard, J., le Roux, C. -T. and Onnée, Y., 1973. 'Les dépôts de Planguenoul et le Bronze final des Côtes-du-Nord'. Ann. Bret. 80, 35-60.
- Briard, J. and Verron, G., 1976a. Typologie des objets de l'Age du Bronze en France. Fascicule III: Haches (1). Paris.
- Briard, J. and Verron, G., 1976b. Typologie ... Fascicule IV: Haches (2), Herminettes. Paris.
- Briggs, C. S., 1976. 'Notes on the distribution of some raw materials in later prehistoric Britain'. In, Settlement and Economy, 267-287.
- Briscoe, G., 1954. 'A bronze socketed axe of Danish type from Wangford, near Lakenheath'. Ant. J. 34, 77.
- Briscoe, G. and Furness, A., 1955. 'A hoard of Bronze Age weapons from Eriswell near Mildenhall'. Ant. J. 35, 218-219.

- Brisson, A. and Hatt, J. J., 1953. 'Les nécropoles hallstattiennes d'Aulnay-aux-Planches (Marne)'. RAECE 4, 193-233.
- Brisson, A. and Hatt, J. J., 1966. 'Fonds de cabanes de l'Age du Bronze final et du premier Age du Fer en Champagne (première partie)'. RAECE 17, 165-197.
- Brisson, A. and Hatt, J. J., 1967. 'Fonds ... (suite et fin)'. RAECE 18, 7-51.
- Britnell, W. J., 1976. 'Antler cheekpieces of the British Late Bronze Age'. Ant. J. 56, 24-34.
- Britton, D., 1960. 'The Isleham hoard, Cambridgeshire'. Antiquity 34, 279-282.
- Britton, D., 1961. 'A study of the composition of Wessex culture bronzes'. Archaeometry 4, 39-52.
- Britton, D., 1963. 'Traditions of metal-working in the later Neolithic and Early Bronze Age of Britain: part I'. PPS 29, 258-325.
- Broholm, H. C., 1935. 'Enkeltfund fra Bronzealderen'. Aarbøger, 257-264.
- Broholm, H. C., 1943. Danmarks Bronzealder 1. København.
- Broholm, H. C., 1944. Danmarks Bronzealder 2. København.
- Broholm, H. C., 1946. Danmarks Bronzealder 3. København.
- Broholm, H. C., 1949. Danmarks Bronzealder 4. København.
- Broholm, H. C., 1953. Danske Oldsager 4. København.
- Broholm, H. C., Larsen, W. P. and Skjerne, G., 1949. The lures of the Bronze Age. Copenhagen.
- Brøgger, A. W., 1913. 'Nogen armringer fra aeldre bronsealder fra Jaederen, Norge'. In, Montelius Festschrift, 97-104.
- Brown, M. A. and Blin-Stoyle, A. E., 1959. 'A sample analysis of British Middle and Late Bronze Age material, using optical spectrometry'. PPS 25, 188-208.
- von Brunn, W. A., 1953. 'Reichverzierte Hallstatt B-Messer aus Mitteldeutschland'. Germania 31, 15-24.
- von Brunn, W. A., 1954. Steinpackungsgräber von Köthen. Deutsche Akademie der Wissenschaften zu Berlin. Schriften der Sektion für Vor- und Frühgeschichte 3. Berlin.
- von Brunn, W. A., 1959. Die Hortfunde der frühen Bronzezeit aus Sachsen-Anhalt, Sachsen und Thüringen. Bronzezeitliche Hortfunde, Teil I. Deutsche Akademie der Wissenschaften zu Berlin. Schriften der Sektion für Vor- und Frühgeschichte 7. Berlin.
- von Brunn, W. A., 1968. Mitteldeutsche Hortfunde der jüngeren Bronzezeit. RGF 29. Berlin.

- Brunsting, H. , 1962. 'De sikkels van Heiloo'. OMROL 43, 107-115.
- Brunsting, H. and Verwers, G. J. , 1975. 'Het urnenveld bij Valkenswaard, Prov. Noord- Brabant'. APL 8, 53-77.
- van Buchem, H. J. H. , 1941. De fibulae van Nijmegen. Deel I. Inleiding en katalog. Nijmegen.
- Burgess, C. B. , 1962a. 'A socketed axe from central Monmouthshire and its significance for the Bronze Age in Wales and the Marches'. The Monmouthshire Antiquary 1/2, 17-27.
- Burgess, C. B. , 1962b. 'A palstave from Buckley, Flintshire, with some notes on 'shield' pattern palstaves'. Flintshire Historical Society Publications, Journal 20, 92-95.
- Burgess, C. B. , 1964. 'A palstave from Chepstow'. The Monmouthshire Antiquary 1/4, 117-124.
- Burgess, C. B. , 1967-70. 'Some decorated socketed axes in Canon Greenwell's collection'. YAJ 42, 267-272.
- Burgess, C. B. , 1968a. 'The later Bronze Age in the British Isles and north-western France'. Arch. J. 125, 1-45.
- Burgess, C. B. , 1968b. Bronze Age metalwork in northern England c. 1000 to 700 B.C. Newcastle.
- Burgess, C. B. , 1968c. 'Bronze Age dirks and rapiers as illustrated by examples from Durham and Northumberland'. Transactions of the Architectural and Archaeological Society of Durham and Northumberland² 1, 3-26.
- Burgess, C. B. , 1969a. 'Breton palstaves from the British Isles'. Arch. J. 126, 149-153.
- Burgess, C. B. , 1969b. 'Chronology and terminology in the British Bronze Age'. Ant. J. 49, 22-29.
- Burgess, C. B. , 1974. 'The Bronze Age'. In, British prehistory, ed. C. Renfrew. London, 165-232.
- Burgess, C. B. , 1976a. 'The Gwithian mould and the forerunners of South Welsh axes'. In, Settlement and Economy, 69-79.
- Burgess, C. B. , 1976b. 'Burials with metalwork of the later Bronze Age in Wales and beyond'. In, Welsh antiquity. Essays mainly upon prehistoric topics presented to H. N. Savory ... ed. G. C. Boon and J. M. Lewis. Cardiff, 81-104.
- Burgess, C. B. , Coombs, D. and Davies, D. G. , 1972. 'The Broadward complex and barbed spearheads'. In, Chitty Festschrift, 211-283.
- Burgess, C. B. and Cowen, J. D. , 1972. 'The Ebwal hoard and Early Bronze Age metal-working traditions'. In, Chitty Festschrift, 167-181.
- Burgess, C. B. and Miket, R. , 1974. 'A bronze axe from Elsdon, Northumberland, and the problem of Middle Bronze Age flanged axes'. Arch. Ael.⁵ 2, 27-32.

- Burgess, C. B. and Miket, R., 1976. 'Three socketed axes from north-east England, with notes on faceted and ribbed socketed axes'. Arch. Ael. ⁵ 4, 1-9.
- Burley, E., 1955-56. 'A catalogue and survey of the metal-work from Traprain Law'. PSAS 89, 118-226.
- Bursch, F. C., 1933. 'Het urnenveld op het landgoed Oostening onder Bennekom'. OMROL 14, 26-38.
- Bursch, F. C., 1936. 'Grafvormen van het noorden'. OMROL 17, 53-72.
- Bursch, F. C., 1940. 'Een steenen hamer uit Midden-Limburg'. OMROL 21, 16-18.
- Bursch, F. C., 1942. 'Onze urnenvelden'. OMROL 23, 48-77.
- Busch, R., 1972. Review of Laux 1971. NNU 41, 304-309.
- Bushe-Fox, J. P., 1915. Excavations at Hengistbury Head, Hampshire, in 1911-12. Reports of the Research Committee of the Society of Antiquaries of London 3. London.
- Butcher, C. H., 1922. 'A hoard of bronzes discovered at Grays Thurrock'. Ant. J. 2, 105-108.
- Butler, J. J., 1956. 'The bronze pin from Haamstede (Province of Zeeland, Netherlands)'. Palaeohistoria 5, 73-76.
- Butler, J. J., 1959. 'Vergeten schatvondsten uit de Bronstijd'. Honderd Eeuwen Nederland. (Antiquity and Survival 2/5-6.) 125-142.
- Butler, J. J., 1960a. 'A Bronze Age concentration at Bargerooosterveld'. Palaeohistoria 8, 101-126.
- Butler, J. J., 1960b. 'Drie bronsdepots van Bargerooosterveld'. NDV 78, 205-231.
- Butler, J. J., 1961a. 'A looped spearhead converted to a pegged spearhead, from 's-Hertogenbosch (North Brabant)'. Helinium 1, 54-55.
- Butler, J. J., 1961b. 'De Noordnederlandse fabrikanten van bijlen in de late Bronstijd en hun produkten'. NDV 79, 199-233.
- Butler, J. J., 1963a. 'Bronze Age connections across the North Sea'. Palaeohistoria 9.
- Butler, J. J., 1963b. 'Ook in de oudere Bronstijd bronsbewerking in Noord-Nederland'. NDV 81, 181-212.
- Butler, J. J., 1963c. 'An Early Bronze Age spearhead from De Zilk (South Holland)'. Helinium 3, 241-245.
- Butler, J. J., 1964a. 'The bronze rapier from Zwaagdijk, Gemeente Wervershoof, Prov. North Holland'. BROB 14, 37-43.
- Butler, J. J., 1964b. 'The bronze flanged axe from Alphen, Prov. North Brabant'. BROB 14, 66-68.
- Butler, J. J., 1965. 'Ook eens iets voor dames'. NDV 83, 163-185.

- Butler, J. J., 1968-69. 'Een urnenvelden-kokermes uit de Hidsmeden bij Onstwedde'. Groningse Volksalmanak 10, 206-223.
- Butler, J. J., 1969. Nederland in de Bronstijd. Fibulareeks 31. Bussum.
- Butler, J. J., 1973a. 'The big bronze knife from Hardenburg'. In, Brunsting Festschrift, 15-27.
- Butler, J. J., 1973b. 'Einheimische Bronzebeilproduktion im Niederrhein-Maasgebiet'. Palaeohistoria 15, 319-343.
- Butler, J. J. and Bakker, J. A., 1961. 'A forgotten Middle Bronze Age hoard with a Sicilian razor from Ommerschans (Overijssel)'. Helinium 1, 193-210.
- Butler, J. J., Lanting, J. N. and van der Waals, J. D., 1972. 'Anner Tol III'. Helinium 12, 225-241.
- Butler, J. J. and Sarfatij, H., 1970-71. 'Another bronze ceremonial sword by the Plougrescant-Ommerschans smith'. BROB 20-21, 301-309.
- Butler, J. J. and Smith, I. F., 1956. 'Razors, urns and the British Middle Bronze Age'. ULIA Twelfth Annual Report, 20-52.
- Butler, J. J. and van der Waals, J. D., 1960. 'Three Late Bronze Age gold bracelets from the Netherlands'. Palaeohistoria 8, 91-99.
- Butler, J. J. and Waterbolk, H. T., 1974. 'La fouille de A. E. van Giffen à "La Motta" '. Palaeohistoria 16, 107-167.
- Cabrol, A., 1937. 'Hache en cuivre, gouge et ciseau en bronze'. BSPF 34, 366-373.
- Cabrol, A., 1939. 'Bronzes des dragages de la Saône'. BSPF 36, 407-416.
- Cabrol, A. and Pauron, H., 1937. 'Un gué préhistorique a La Rochette (Seine-et-Marne)'. BSPF 34, 481-493.
- Calkin, J. B., 1962. 'The Bournemouth area in the Middle and Late Bronze Age, with the "Deverel-Rimbury" problem reconsidered'. Arch. J. 119, 1-65.
- Camps, G., 1976. 'La navigation en France au Néolithique et à l'Age du Bronze'. In, Guilaine 1976a, 192-201.
- Carancini, G. L., 1975. Die Nadeln in Italien. PBF XII/2. München.
- Case, H., 1969. 'Neolithic explanations'. Antiquity 43, 176-186.
- de Castro Nunes, J., 1957. 'Un importante hallazgo del bronce en Portugal'. Zephyrus 8, 135-145.
- de Castro Nunes, J. and Vasco Rodrigues, A., 1957. 'Dos nuevas espadas del Bronce Final en Portugal'. Zephyrus 8, 279-285.
- Cayeux, L., 1970. 'Complément à l'inventaire des objets du bronze en Seine-Maritime (Saint-Pierre-en-Port)'. BSPF 67, 121-123.
- Celoria, F., 1974. 'A Late Bronze Age pin from Brentford'. Transactions of the London and Middlesex Archaeological Society 25, 278-281.

- Challis, A. J. and Harding, D. W., 1975. Later prehistory from the Trent to the Tyne. BAR 20. Oxford.
- Champion, T., 1975. 'Britain in the European Iron Age'. Arch. Atlant. 1, 127-145.
- Chantre, E., 1875. Etudes paléoethniques dans le bassin du Rhône. Age du Bronze. Album. Paris.
- Charles, J. A., 1975. 'Where is the tin?'. Antiquity 49, 19-24.
- Chertier, B., 1976. Les nécropoles de la civilisation des champs d'urnes dans la région des marais de Saint-Gond (Marne). VIIIe supplément à Gallia Préhist. Paris.
- Chevallier, R., 1959. 'Deux lances de Hallstatt en bronze provenant du lit de la Marne (Aisne)'. RAECE 10, 157-160.
- Childe, V. G., 1930. The Bronze Age. Cambridge.
- Childe, V. G., 1935. The prehistory of Scotland. London.
- Childe, V. G., 1939. 'Double-looped palstaves in Britain'. Ant. J. 19, 320-323.
- Childe, V. G., 1940. Prehistoric communities of the British Isles. London/Edinburgh.
- Childe, V. G., 1951. 'The first waggons and carts—from the Tigris to the Severn'. PPS 17, 177-194.
- Childe, V. G., 1957. 'The Bronze Age'. Past and Present 12, 2-15.
- Claassen, A., 1971. 'De bronstijd in Limburg'. Limburg 50, 145-162.
- Claassen, A., 1975. 'Hilversum-urne te Maaseik'. Limburg 54, 119-125.
- Claerhout, J., 1901. 'Notice sur les objets en bronze de l'Age du Bronze rencontrés dans les fouilles de la station palustre de Denterghem'. Annales de la Société d'Archéologie de Bruxelles 15, 182-198.
- Clark, J. G. D., 1932-34. 'The curved flint sickle blades of Britain'. PPSEA 7, 67-81.
- Clark, J. G. D., 1936. 'Report on a Late Bronze Age site in Mildenhall Fen, west Suffolk'. Ant. J. 16, 29-50.
- Clark, J. G. D., 1938. 'Early man'. In, VCH Cambridgeshire and the Isle of Ely 1. London, 247-303.
- Clark, J. G. D., 1948. 'The development of fishing in prehistoric Europe'. Ant. J. 28, 45-85.
- Clark, J. G. D., 1952. Prehistoric Europe: the economic basis. London.
- Clark, J. G. D., 1966. 'The invasion hypothesis in British archaeology'. Antiquity 40, 172-189.
- Clark, J. G. D. and Fell, C. I., 1953. 'The Early Iron Age site at Micklemoor Hill, West Harling, Norfolk, and its pottery'. PPS 19, 1-40.

- Clarke, J. G. D. and Godwin, H., 1940. 'A Late Bronze Age find near Stuntney, Isle of Ely'. Ant. J. 20, 52-71.
- Clarke, P. J., 1971. 'The Neolithic, Bronze and Iron Age and Romano-British finds from Mount Batten, Plymouth, 1832-1939'. Devon Archaeological Society Proceedings 29, 137-161.
- Clarke, R. R., 1939. 'The Iron Age in Norfolk and Suffolk'. Arch. J. 96, 1-113.
- Clason, A. T., 1959. 'Een grafveld bij Holsloot'. NDV 77, 207-219.
- Clay, R. C. C., 1922-24. 'An Early Iron Age site on Fifield Bavant Down'. WAM 42, 457-496.
- Clough, T. H. Mck., 1970-73. 'A hoard of Late Bronze Age metalwork from Aylsham, Norfolk'. Norfolk Archaeology 35, 159-169.
- Clough, T. H. Mck., 1972. 'Recent Bronze Age finds from Cumbria'. TCWAAS² 72, 44-52.
- Clough, T. H. Mck. and Wade-Martins, P., 1970-73. 'A Late Bronze Age hoard from Foxburrow Farm, North Elmham, Norfolk, 1970'. Norfolk Archaeology 35, 6-18.
- Coblenz, W., 1952. Grabfunde der Mittelbronzezeit Sachsens. Dresden.
- Coffyn, A., 1967. 'Quelques épées du Bronze final du sud-ouest de la France'. BSPF 64, 785-798.
- Coffyn, A., 1969. 'L'Age du Bronze au Musée du Périgord'. Gallia Préhist. 12, 83-120.
- Coffyn, A., 1976. 'Les civilisations de l'Age du Bronze en Aquitaine'. In, Guilaine 1976a, 532-542.
- Coffyn, A. and Gomez, J., 1971. 'Récentes trouvailles protohistoriques en Charente'. BSPF 68, 248-252.
- Coghlan, H. H., 1970. A report upon the hoard of Bronze Age tools and weapons from Yattendon, near Newbury, Berkshire. Newbury.
- Coles, J. M., 1958-59. 'Scottish swan's-neck sunflower pins'. PSAS 92, 1-9.
- Coles, J. M., 1959-60. 'Scottish Late Bronze Age metalwork: typology, distributions and chronology'. PSAS 93, 16-134.
- Coles, J. M., 1961. 'The Salta Moss rapier'. TCWAAS² 61, 16-24.
- Coles, J. M., 1962. 'European Bronze Age shields'. PPS 28, 156-190.
- Coles, J. M., 1963. 'Irish Bronze Age horns and their relations with northern Europe'. PPS 29, 326-356.
- Coles, J. M., 1963-64. 'Scottish Middle Bronze Age metalwork'. PSAS 97, 82-156.
- Coles, J. M., 1965a. 'A rock carving from south-west Ireland'. PPS 31, 374-375.

- Coles, J. M., 1965b. 'The archaeological evidence for a "bull cult" in Late Bronze Age Europe'. Antiquity 39, 217-219.
- Coles, J. M., 1967a. 'The Plzeň shield: a problem in Nordic and east Mediterranean relations'. Germania 45, 151-153.
- Coles, J. M., 1967b. 'Some Irish horns of the Late Bronze Age'. JRSAI 97, 113-117.
- Coles, J. M., 1968-69. 'Scottish Early Bronze Age metalwork'. PSAS 101, 1-110.
- Coles, J. M., 1971a. 'Bronze Age spearheads with gold decoration'. Ant. J. 51, 94-95.
- Coles, J. M., 1971b. 'Dowris and the Late Bronze Age of Ireland: a footnote'. JRSAI 101, 164-165.
- Coles, J. M., Coutts, H. and Ryder, M. L., 1964. 'A Late Bronze Age find from Pyotdykes, Angus, Scotland, with associated gold, cloth, leather and wood remains'. PPS 30, 186-198.
- Coles, J. M. and Taylor, J. J., 1971. 'The Wessex culture: a minimal view'. Antiquity 45, 6-14.
- Collinge, W. E., 1930. 'An early Italian brooch from Yorks.'. Ant. J. 10, 54-55.
- Collins, A. E. P., 1948-49. 'Bronzes and pottery from Wallingford'. Berkshire Archaeological Journal 51, 65-66.
- Collis, J., 1977. 'An approach to the Iron Age'. In, The Iron Age in Britain—a review, ed. J. Collis. Sheffield, 1-7.
- Comhaire, C. -J., 1894-95. 'Les premiers ages du métal dans les bassins de la Meuse et de l'Escaut'. Bulletin de la Société d'Anthropologie de Bruxelles 13, 97-226.
- Contenau, G. and Ghirshman, R., 1935. Fouilles du Tépé-Giyan. Musée du Louvre, Département des Antiquités Orientales, Série Archéologique 3.
- Cook, R. M., 1972. Greek painted pottery.² London.
- Coombs, D. G., 1971. Late Bronze Age metalwork in the south of England. Ph.D. thesis. University of Cambridge.
- Coombs, D. G., 1974a. 'Ein spätbronzezeitlicher Depotfund von Snettisham (Norfolk)'. Arch. Korr. 4, 31-35.
- Coombs, D. G., 1974b. 'Type IV barbed spearheads of the British Late Bronze Age—additions'. Arch. J. 131, 264-267.
- Coombs, D. G., 1975a. 'Bronze Age weapon hoards in Britain'. Arch. Atlant. 1, 49-81.
- Coombs, D. G., 1975b. 'The Dover Harbour bronze find—a Bronze Age wreck?'. Arch. Atlant. 1, 193-195.
- Coombs, D. G. and Chitty, L. F., 1967-68. 'Bronze hoard and burial found at Greensborough Farm, Shenstone, Staffordshire, in 1824'. Transactions

- Cordier, G., 1965. 'Pointe de lance à oeillets draguée en Loire à Langeais (Indre-et-Loire)'. RAC 4, 35-47.
- Cordier, G., 1972. 'Le site archéologique du dolmen de Villaine à Sublaines (Indre-et-Loire). Première partie (Néolithique, Age du Bronze). I étude archéologique'. Gallia Préhist. 15, 31-92.
- Cordier, G., 1974. 'Deux "nouvelles" épées du type de Monza'. RAECE 25, 419-422.
- Cordier, G., 1976. 'Les civilisations de l'Age du Bronze dans le Centre-ouest et les pays de la Loire moyenne'. In, Guilaine 1976a, 543-560.
- Cordier, G and Gruet, M., 1975. 'L'Age du Bronze et le premier Age du Fer en Anjou'. Gallia Préhist. 18, 157-287.
- Cordier, G., Millotte, J. -P. and Riquet, R., 1959. 'La cachette de bronze d'Azay-le-Rideau (Indre-et-Loire)'. Gallia Préhist. 2, 57-71.
- Cordier, G., Millotte, J. -P. and Riquet, R., 1960. 'Trois cachettes de bronze de l'Indre-et-Loire'. Gallia Préhist. 3, 109-128.
- Cotton, M. A. and Frere, S. S., 1966-70. 'Ivinghoe Beacon excavations 1963-65'. Records of Buckinghamshire 18, 187-260.
- Couchman, C. K., 1975. 'The Bronze Age cemetery at Ardleigh, Essex: a further consideration'. TEAS³ 7, 14-32.
- Couchman, J. E., 1918-19. '... Neolithic spoons found in Sussex ...'. PSAL² 31, 108-119.
- Couchman, J. E., 1924. 'Hallstatt brooches in Britain'. Ant. J. 4, 50-51.
- Couppé, J., Gallois, J. -P. and Hurtrelle, J., 1971-75. 'Sépulture hallstattienne du Blanc Pavé à Etaples'. Bulletin de la Commission Départementale des Monuments Historiques du Pas-de-Calais 9, 197-199.
- Coursaget, J. and le Run, J., 1966. 'Gif-sur-Yvette natural radiocarbon measurements I'. Radiocarbon 8, 128-141.
- Courtois, J. -C., 1957. 'Note sur des objets inédits de l'Age du Bronze conservés dans les Musées de Lyon'. BSPF 54, 262-273.
- Courtois, J. -C., 1960. 'L'Age du Bronze dans les Hautes-Alpes'. Gallia Préhist. 3, 47-108.
- Courtois, J. -C., 1976. 'Les civilisations de l'Age du Fer dans les Alpes'. In, Guilaine 1976a, 708-723.
- Coutil, L., 1921. 'L'Age du Bronze en Normandie, Eure, Seine-Maritime, Orne, Calvados et Manche'. Comptes Rendus de L'Association Francaises pour l'Avancement des Sciences, 45, Congrès à Rouen, 791-812.
- Coutil, L., 1922. 'L'Age du Bronze en Normandie (suite et fin)'. Comptes Rendus de l'Association Francaise pour l'Avancement des Sciences, 46, Congrès à Montpellier, 495-506.

- Coutil, L., 1925. 'Cachette de l'Age du Bronze de Longchamps, canton d'Etrépagny, arrondissement des Andelys (Eure)'. BSPF 22, 192-194.
- Coutil, L., 1928. Poignards, rapières et épées de l'Age du Bronze. Le Mans. (Extrait de l'Homme Préhistorique, 1926-28.)
- Cowen, J. D., 1933. 'Two bronze swords from Ewart Park, Wooler'. Arch. Ael.⁴ 10, 185-198.
- Cowen, J. D., 1951. 'The earliest bronze swords in Britain and their origins on the continent of Europe'. PPS 17, 195-213.
- Cowen, J. D., 1952. 'Bronze swords in northern Europe: a reconsideration of Sprockhoff's Griffzungenschwerter'. PPS 18, 129-147.
- Cowen, J. D., 1955. 'Eine Einführung in die Geschichte der bronzenen Griffzungenschwerter in Süddeutschland und den angrenzenden Gebieten'. 36. BRGK 52-155.
- Cowen, J. D., 1956. 'Les origines des épées de bronze du type à langue de carpe' In, Congresos Internacionales de Ciencias Prehistoricas y Proto-historicas. Actas de la IV Session, Madrid, 1954, ed. A. Beltrán. Zaragoza, 639-642.
- Cowen, J. D., 1961. 'The Late Bronze Age chronology of central Europe: some reflections'. Antiquity 35, 40-44.
- Cowen, J. D., 1962. Review of Müller-Karpe 1961. Antiquity 36, 75-78.
- Cowen, J. D., 1966. 'The origins of the flange-hilted sword of bronze in continental Europe'. PPS 32, 262-312.
- Cowen, J. D., 1967. 'The Hallstatt sword of bronze: on the continent and in Britain'. PPS 33, 377-454.
- Cowen, J. D., 1971. 'A striking maritime distribution pattern'. PPS 37/2, 154-166.
- Cowen, J. D. and Maryon, H., 1935. 'The Whittingham sword'. Arch. Ael.⁴ 12, 280-309.
- Crawford, O. G. S., 1911-12. 'The gold torc ...' PSAL² 24, 39-49.
- Crawford, O. G. S., 1922. 'A prehistoric invasion of England' Ant. J. 2, 27-35.
- Crawford, O. G. S. and Wheeler, R. E. M., 1920-21. 'The Llynfawr and other hoards of the Bronze Age' Archaeologia 71, 133-140.
- Cunisset-Carnot, P., Mohen, J. -P. and Nicolardot, J. -P., 1971. 'Une fibule "chypriote" trouvée en Côte-d'Or' BSPF 68, 602-609.
- Cunliffe, B., 1971. 'A Bronze Age settlement at Chalton, Hants (Site 78)' Ant. J. 50, 1-13.
- Cunliffe, B., 1974. Iron Age communities in Britain. London/Boston.
- Cunliffe, B., 1976a. 'Danebury, Hampshire: second interim report on the excavations 1971-5' Ant. J. 56, 198-216.

- Cunliffe, B., 1976b. 'Hill-forts and oppida in Britain' In, Problems in economic and social archaeology ... in honour of Grahame Clark ..., ed. G. de G. Sieveking, I. H. Longworth and K. E. Wilson. London, 343-358.
- Cunliffe, B., 1978. Iron Age communities in Britain.² London/Boston.
- Cunliffe, B. and O'Connor, B., 1979. 'The Late Bronze Age hoard from Danebury, Hants'. In, BAR 67, 1979.
- Cunliffe, B. and Phillipson, D. W., 1968. 'Excavations at Eldon's Seat, Encombe, Dorset'. PPS 34, 191-237.
- Cunnington, M. E., 1913-14. 'Casterley Camp'. WAM 38, 53-103.
- Cunnington, M. E., 1923. The Early Iron Age inhabited site at All Cannings Cross Farm, Wiltshire. Devizes.
- Cunnington, M. E., 1926. 'Bronze arrow-head from Wilts.'. Ant. J. 6, 182.
- Curwen, E. C., 1948. 'A bronze cauldron from Sompting, Sussex'. Ant. J. 28, 157-163.
- Curwen, E. C., 1954. The archaeology of Sussex. London.
- Dale, W., 1897-99. PSAL² 17, 129-132.
- Dale, W., 1905-07. '... on a discovery of a bronze bucket of the Early Iron Age at Weybridge in Surrey'. PSAL² 21, 464.
- Dale, W., 1913-14. PSAL² 26, 32-33.
- Darwin, W. E., 1894-97. 'A hoard of bronze implements found at Bitterne' PHFC 3, 53-66.
- Dastugue, J., 1971. 'Informations archéologiques. Circonscription de Haute et Basse Normandie'. Gallia Préhist. 14, 325-338.
- Daugas, J. -P., 1972. 'Premières observations sur des éléments mobiliers métalliques de l'Age du Bronze dans le Massif Central'. Congrès Pré-historique de France, 19, Auvergne 1969. Paris, 177-182.
- Daugas, J. -P., 1976. 'Les civilisations de l'Age du Bronze dans le Massif Central'. In, Guilaine 1976a, 506-521.
- Daugas, J. -P., and Pétrequin, P., 1970. 'Nouvelles considerations sur la céramique à cannelures en Franche-Comte à l'Age du Bronze final'. RAECE 21, 393-410.
- Davey, P. J., 1971. 'The distribution of later Bronze Age metalwork from Lincolnshire'. PPS 27/1, 96-111.
- Davey, P. J., 1973. 'Bronze Age metalwork from Lincolnshire'. Archaeologia 104, 51-127.
- Davey, P. J. and Forster, E., 1975. Bronze Age metalwork from Lancashire and Cheshire. University of Liverpool, Department of Prehistoric Archaeology, Work Notes 1, Liverpool.
- Davey, P. J. and Knowles, G. C., 1971. 'The Appleby hoard'. Arch. J. 128, 154-161.

- Davies, D. G., 1967. 'The Guilsfield hoard; a reconsideration'. Ant. J. 47, 95-108.
- Davies, D. G., 1968. 'A palstave and amber bead from Colchester, Essex'. Ant. J. 48, 1-5.
- Davies, E., 1929. The prehistoric and Roman remains of Denbighshire. Cardiff.
- Davies, E., 1949. The prehistoric and Roman remains of Flintshire. Cardiff.
- Dawans, F., 1972. 'Les objets en métal de l'Age du Bronze dans le province de Liège'. Bulletin de l'Institut Archéologique Liegeois 84, 305-338.
- Deady, J. and Doran, E., 1972. 'Prehistoric copper mines, Mount Gabriel, Co. Cork'. JCHAS 77, 26-27.
- Déchelette, J., 1910. Manuel d'Archéologie II/1. Paris.
- Degen, R., 1968. 'Ein späthallstattzeitlicher Armspangen-Typus am Oberrhein'. In, Provincialia. Festschrift für Rudolf Lauer-Belart, ed. E. Schmid, L. Berger and P. Bürgin. Basel/Stuttgart, 523-550.
- Deglatigny, L., 1919-20. 'Découverte d'une cachette de bronze au Mont-Saint-Aignan (Seine-Inférieure)'. Bulletin de la Société Normande d'Etudes Préhistoriques 24, 66-68.
- Deglatigny, L., 1924. Fouilles de la Place des Carmes à Rouen en 1923—Cachette de bronze découverte à Biessard près de Rouen. Rouen.
- Dehn, R., 1972. Die Urnenfelderkultur in Nordwürttemberg. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg 1. Stuttgart.
- Dehn, W., 1952. 'Ein Brucherzfund der Hügelgräberbronzezeit von Bühl, Ldkr. Nördlingen (Bayern). Germania 30, 174-187.
- Dehn, W., 1971. 'Hohmichele Grab 6—Hradenin Grab 28—Vače (Watsch) Helmgrab'. Fundberichte aus Schwaben 19, 82-88.
- Dehn, W. and Frey, O. -H., 1962. 'Die absolute Chronologie der Hallstatt und Frühlatènezeit Mitteleuropas auf Grund des Sudimports'. In, Atti del VI Congresso Internazionale delle Scienze Preistoriche e Protohistoriche, Roma 1962 1. Firenze, 197-208.
- Demolon, P. and Hurtrelle, J., 1973. 'La fosse hallstattienne de Tilloy-lès-Cambrai (Nord)'; Septentrion 3, 8-10.
- Deonna, W., 1934. 'Les cuirasses Hallstattiennes de Fillinges au Musée d'Art et d'Histoire de Geneve'. Préhistoire 3, 93-143.
- Desittere, M., 1961. 'Zwaarden uit de vroege urnenveldenfaze uit de Lage Landen'. Helinium 1, 57-62.
- Desittere, M., 1963. Bibliografisch repertorium der oudheidkundige vondsten in Brabant. Oudheidkundige Repertoria, Reeks A, 3. Brussel.
- Desittere, M., 1967. 'Die Grobkeramik der Urnenfelderkultur in Belgien und den Niederlanden und der sogenannte Harpstedter Stil'. Helinium 7, 260-271.

- Desittere, M., 1968. De urnenveldenkultuur in het gebied tussen Neder-Rijn en Noordzee. DAG 11. Brugge.
- Desittere, M., 1972a. 'L'Age du bronze dans la collection Hasse conservée au musée archéologique d'Anvers'. Archéologie, 30-32.
- Desittere, M., 1972b. 'Le Trou del Leuve à Sinsin'. Helinium 12, 160-161.
- Desittere, M., 1973a. 'De bronzen bijlen uit Waasmunster'. Annalen van de Oudheidkundige Kring van het land van Waas 76, 7-13.
- Desittere, M., 1973b. 'Nogmaals over Wase bronzen bijlen'. Annalen van de Oudheidkundige Kring van het land van Waas 76, 137-144.
- Desittere, M., 1973c. 'Haches du type d'Arreton en Belgique'. Helinium 13, 65-70.
- Desittere, M., 1974a. 'Quelques considérations sur l'Age du Bronze et le premier Age du Fer en Belgique et dans le sud des Pays-Bas'. Helinium 14, 105-134.
- Desittere, M., 1974b. 'Archeologische kroniek'. HMGOG 28, 141-158.
- Desittere, M., 1974c. 'I Paesi Bassi dalla fine del neolitico alla media età del bronzo'. Preistoria Alpina 10, 13-20.
- Desittere, M., 1975. 'Archeologische kroniek'. HMGOG 29, 117-127.
- Desittere, M., 1976. 'Autochtones et immigrants en Belgique et dans le sud des Pays-Bas au Bronze final'. In, Acculturation and continuity in Atlantic Europe. Papers presented at the IV Atlantic Colloquium, Ghent 1975, ed. S. J. de Laet. DAG 16. Brugge, 77-94.
- Desittere, M. and Weissenborn, A. M., 1977. Catalogus voorwerpen uit de metaaltijden. (Bijloke-museum.) Ghent.
- Devenish, D. C., 1964. 'Local bronze implements in Kingston-upon-Thames museum'. Sy. A. C. 61, 1-9.
- Dixon, F., 1849. 'On bronze or brass relics, celts, &c., found in Sussex'. Sx. A. C. 2, 260-269.
- Dixon, P. W., 1973. Crickley Hill, fifth report. (Cheltenham.)
- Dohle, G., 1970. Die Urnenfelderkultur im Neuweider Becken. Jahrbuch für Geschichte und Kunst des Mittelrheins Beiheft 2. Koblenz.
- Doize, R. L., 1965a. 'La collection Paul Boulet et les anciennes découvertes archéologiques des environs du confluent de l'Aisne et de l'Oise'. BSPF 62, 245-252.
- Doize, R. L., 1965b. 'La cachette de l'Age du Bronze de Chamery (Marne)'. Congrès Préhistorique de France, 16, Monaco 1959. Paris, 245-252.
- van Doorselaer, A., 1970. 'Kemmel (W. Vl.): Attisch aardewerk'. Archeologie, 21.
- Doyle, R., 1970. 'Note on a Bronze Age founder's hoard from Grays Thurrock'. Panorama 13, 61-64.

- Drack, W , 1958. 'Wagengräber und Wagenbestandteile aus Hallstattgrabhügeln der Schweiz'. Zeitschrift für Schweizerische Archäologie und Kunstgeschichte 18, 1-67.
- Drack, W. , 1960-61. 'Spuren von urnenfelderzeitlichen Wagengräbern aus der Schweiz'. JSGU 48, 74-77.
- Drack, W. , 1970. 'Zum bronzenen Ringschmuck der Hallstattzeit aus dem Schweizerischen Mittelland und Jura'. JSGU 55, 23-87.
- Drack, W. , 1972-73. 'Waffen und Messer der Hallstattzeit aus dem Schweizerischen Mittelland und Jura'. JSGU 57, 119-168.
- Drack, W. , 1977. 'Die Bronzegefäße der Hallstattzeit aus dem Schweizerischen Mittelland und Jura'. JSGU 60, 103-120.
- Drew, C . D. , 1943. 'Palstaves from Dewlish, Dorset'. Antiquity 7, 221.
- Drew, C. D. , 1934. 'Bronze Age hoard from Haselbury Bryan'. PDNHAS 56, 131-132.
- Drew, C. D. , 1935. 'A Late Bronze Age hoard from Lulworth, Dorset'. Ant. J. 15, 449-451.
- Drewett, P. , 1976. 'The excavation of four round barrows of the second millennium B. C. at West Heath, Harting, 1973-75'. Sx. A. C. 114, 126-150.
- Dubus, A. , 1912. Epoque du Bronze. Carte et tableau analytique de la répartition du bronze dans la Seine-Inferieure. Extrait du Bulletin de la Société Géologique de Normandie.
- Dujardin, G. and Gravet, F. , 1865-66. 'Cimetières Gallo-Germains de Louette-St-Pierre et de Gedinne'. Annales de la Société Archéologique de Namur 9, 39-59.
- Dunning, G. C , 1934. 'The swan's-neck and ring-headed pins of the Early Iron Age in Britain'. Arch. J 91, 269-295.
- Dunning, G. C. , 1936a. 'Hoard of palstaves found at Werrar, near Northwood'. Proceedings of the Isle of Wight Natural History and Archaeological Society 2/7, 616-617,
- Dunning, G. C. , 1936b. 'Note on two urns of overhanging-rim type found abroad'. Ant. J. 16, 160-164.
- Dunning, G. C. , 1959. 'The distribution of socketed axes of Breton type'. UJA 22, 53-55.
- Durvin, P, 1964. 'La céramique protohistorique de Thiverny (Oise)'. Celticum 9, 29-44.
- Durvin, P. , 1965. 'Note sur "un vase à decor excisé découvert aux environs de Clermont-en-Beauvais" '. Celticum 12, 66-68.
- Duval, A. and Buchenschutz, O. , 1976. 'Les civilisations de l'Age du Fer dans le Bassin Parisien et la France du Nord'. In, Guilaine 1976a, 789-801.

- Duval, A., Eluère, C. and Mohen, J -P , 1974. 'Les fibules antérieures au VI^e siècle avant notre ère, trouvées en France'. Gallia 32, 1-61.
- Duval, P. -M., 1961. Paris antique. Paris.
- Dvořák, F., 1938. Wagengräber der älteren Eisenzeit in Böhmen. Praehistorica 1. Praha.
- Edeine, B., 1961. 'De quelques objets de l'Age du Bronze, inédits ou peu connus, trouvés dans le département de Calvados'. BSPF 58, 676-692.
- Edeine, B., 1964. 'Quelques résultats d'études métallographiques d'objets de l'Age du Bronze de Basse-Normandie'. BSPF 62, Comptes rendus des séances mensuelles, CXCVIII-CC.
- Edeine, B., 1966. 'Le rempart de l'éperon barré de la Brèche-au-Diable (dit aussi du Mont-Joly) commune de Soumont-Saint-Quentin (Calvados)'. Gallia Préhist. 9, 247-262.
- Edeine, B., 1969. 'Épingle de bronze à tête enroulée trouvée à la Brèche-au-Diable (Calvados)'. BSPF 66, 124-125.
- Edwardson, A. R. n.d. (1969). Bronze Age metalwork in Moyses Hall Museum, Bury St. Edmunds, Suffolk. Bury St. Edmunds.
- Eggert, M. K. H., 1976. Die Urnenfelderkultur in Rheinhessen. Geschichtliche Landeskunde 13. Wiesbaden.
- Ehrenberg, M., 1977. Bronze Age spearheads from Berkshire, Buckinghamshire and Oxfordshire. BAR 34. Oxford.
- Eibner, C., 1973. 'Die urnenfelderzeitlichen Sauggefäße. Ein Beitrag zur morphologischen und ergologischen Umschreibung'. PZ 48, 144-199.
- von Eles, P., 1967-68. 'L'Età del ferro nelle Alpi occidentali'. Cahiers Rhodaniens 14.
- Elgee, F., 1930. Early man in north-east Yorkshire. Gloucester.
- Ellison, A. and Drewett, P., 1971. 'Pits and post-holes in the British Early Iron Age: some alternative explanations'. PPS 37/1, 183-194.
- Eloy, L., 1962. 'Hache à talon et hache à douille avec ailerons simulés provenant du lit de la Meuse Namuroise (Belgique)'. BSPF 59, 772-774.
- Eluère, C., 1972. Les bronzes du Musée de Chartres. Reprinted from Bulletin des Sociétés Archéologiques d'Eure-et-Loir 25.
- Eluère, C., 1974. 'Anneaux de jambe et jambières à spiral de France'. BSPF 71, 543-566.
- Eluère, C., 1975. 'Anneaux réniformes de France'. BSPF 72, 26-32.
- Eluère, C., 1976. 'Un nouvel anneau réniforme décoré'. BSPF 73, 276-279.
- Elzinga, G., 1957. 'Een onderzoek naar de vindplaats van het bronzen zwaard uit Putten'. Westerheem 6, 77-80.
- Elzinga, G., 1957-58. 'Een bronsdepot op de Veluwe in de gemeente Heerde, Gelderland'. BROB 8, 11-25.

- Elzinga, G., 1973. 'Een kringgreppelurnenveld bij Oosterwolde in Friesland'. In, Brunsting Festschrift, 29-47.
- Eogan, G., 1964. 'The later Bronze Age in Ireland in the light of recent research'. PPS 30, 268-351.
- Eogan, G., 1965. Catalogue of Irish bronze swords. Dublin.
- Eogan, G., 1966a. 'A bronze double-edged knife-dagger with openwork handle and ring terminal from Lagore, Co. Meath, and its affinities'. JRSAI 96, 147-156.
- Eogan, G., 1966b. 'Some notes on the origin and diffusion of the bronze socketed gouge'. UJA 29, 97-102.
- Eogan, G., 1967. 'Associated finds of gold bar torcs'. JRSAI 97, 129-175.
- Eogan, G., 1969. 'Lock-rings of the Late Bronze Age'. PRIA 67, 93-148.
- Eogan, G., 1974a. 'Regionale Gruppierungen in der Spätbronzezeit Irlands'. Arch. Korr. 4, 319-327.
- Eogan, G., 1974b. 'Pins of the Irish Late Bronze Age'. JRSAI 104, 74-119.
- Erith, F. H. and Longworth, I. H., 1960. 'A Middle Bronze Age urnfield on Vincas Farm, Ardleigh, Essex'. PPS 26, 178-192.
- Evans, A. J., 1907-09. '...some criticisms (of Montelius 1908)...'. PSAL² 22, 121-128.
- Evans, E., 1930. 'The sword-bearers'. Antiquity 4, 157-172.
- Evans, J., 1881. The ancient bronze implements, weapons and ornaments of Great Britain and Ireland. London.
- Evans, J., 1885. 'On a hoard of bronze objects found in Wilburton Fen, near Ely'. Archaeologia 48, 106-114.
- Eygun, F., 1957. 'Une cachette de fondeur de la fin de l'Age du Bronze à Challans (Vendée)'. Gallia 15/3, 78-85.
- Fallue, L., 1862. 'Notes sur divers objets antiques trouvés dans la Seine, devant Epernay, et sur un cimetière gallo-romain découvert à Argenteuil'. Rev. Arch.² 5, 375-377.
- Farrar, R. A. H., 1952. 'Archaeological fieldwork in Dorset'. PDNHAS 74, 85-110.
- Farrar, R. A. H., 1964. 'Recent discoveries and accessions'. PDNHAS 86, 114-119.
- Felber, H., 1970. 'Vienna Radium Institute. Radiocarbon dates I'. Radio-carbon 12, 298-318.
- Félix, R., 1968. Répertoire bibliographique des découvertes préhistoriques du Département du Nord. Memoires de la Société d'Agriculture, Sciences et Arts de Douai⁵ 2.
- Félix, R. and Deudon, P., 1974. 'Objets de parure en bronze découverts à Haulchin (Nord)'. BSPF 70, 273-278.

- Fell, C. and Coles, J. M., 1965. 'Reconsideration of the Ambleside hoard and the burial at Butts Beck Quarry, Dalton-in-Furness'. TCWAAS² 66, 38-52.
- Fell, C. I., Lethbridge, T. C. and Bushnell, G. H. S., 1948. 'Archaeological notes'. Proceedings of the Cambridge Antiquarian Society 42, 128-130.
- Field, K., 1974. 'Ring-ditches of the upper and middle Great Ouse valley'. Arch. J. 131, 58-74.
- Filip, J., 1962. Celtic civilisation and its heritage. Prague.
- Filip, J., 1966. Enzyklopädisches Handbuch zur Ur- und Frühgeschichte Europas I(A-K). Stuttgart/Berlin/Köln/Mainz.
- Fischer, F., 1971. Die frühbronzezeitliche Anseidlung in der Bleiche bei Arbon TG. Schriften zur Ur- und Frühgeschichte der Schweiz 17. Basel.
- Flanagan, L. N. W., 1959. 'Socketed axe 114:1958'. UJA 22, 52.
- Forrer, R., 1896. Der Dépôtfund von Bonneville. Strassburg i. E.
- Fox, A., 1955. 'Twenty-second report on the archaeology and early history of Devon'. Reports and Transactions of the Devonshire Association 87, 319-326.
- Fox, A., 1957. 'Excavations on Dean Moor, in the Avon valley, 1954-1956, the Late Bronze Age settlement'. Reports and Transactions of the Devonshire Association 89, 18-77.
- Fox, A., 1973. South-west England 3500 BC-AD 600. Newton Abbot.
- Fox, A. and Britton, D., 1969. 'A continental palstave from the ancient field system on Horridge Common, Dartmoor, England'. PPS 35, 220-228.
- Fox, C. E., 1923. The archaeology of the Cambridge region. Cambridge.
- Fox, C. F., 1926. 'Bronze Age'. In, VCH Huntingdonshire 1. London, 201-208.
- Fox, C. F., 1928. 'A Bronze Age refuse pit at Swanwick, Hants'. Ant. J. 8, 331-336.
- Fox, C. F., 1932. The personality of Britain. Cardiff.
- Fox, C. F., 1932-34. 'The distribution of man in East Anglia'; PPSEA 7, 149-164.
- Fox, C. F., 1939. 'The socketed bronze sickles of the British Isles'. PPS 5, 222-248.
- Fox, C. F., 1941. 'The non-socketed sickles of Britain'. Arch. Camb. 96, 136-162.
- Fox, C. F., 1946. A find of the Early Iron Age from Llyn Cerrig Bach, Anglesey. Cardiff.
- Fox, C. F. and Hyde, H. A., 1939. 'A second cauldron and an iron sword from the Llyn Fawr hoard, Rhigos, Glamorganshire'. Ant. J. 19, 369-404.
- Franks, A. W., 1855. Arch. J., 12, 193.

- Frei, B., 1971. 'Die späte Bronzezeit im alpinen Raum'. In, UFAS, 87-102.
- Frere, S. S. and Hooper, W., 1946. 'Late Bronze Age celt from Betworth'. Sy. A. C. 49, 102.
- Frey, O. -H., 1957. 'Die zeitstellung des Furstengrabes von Hatten im Elsass'. Germania 35, 229-249.
- Frey, O. -H., 1964. 'Zu den "rhodischen" Bronzekannen aus Hallstattgräbern'. Marburger Winckelmann-Programm 1963, 18-26.
- Frey, O. -H., 1969. Die Entstehung der Situlenkunst. RGF 31. Berlin.
- Gabrovec, S., 1960. 'Panzergrab von Novo Mesto'. Situla 1, 27-29.
- Gallay, G. and Huber, B., 1972. 'Nouveaux objets de l'Age du Bronze et du Fer provenant de la Saône'. RAECE 23, 295-329.
- Gallus, S. and Horváth, T., 1939. Un peuple cavalier pré-sythique en Hongrie. Dissertationes Pannonicae, Ser. II, 9. Budapest.
- Garašanin, D., 1956. 'Un type special de lance du Hallstatt ancien'. RVM 5, 15-19.
- Garašanin, M., 1973. 'La préhistoire sur le territoire de la République Socialiste de Serbie'. Summary of Praistorija na tlu S.R. Srbije. Beograd. Vol. 2, 593-655.
- Gardner, W. and Savory, H. N., 1964. Dinorben. A hill fort occupied in Early Iron Age and Roman times. Cardiff.
- Gaucher, G., 1973. 'Les dépôts de haches à talon de la région Parisienne'. Gallia Préhist. 16, 211-232.
- Gaucher, G., 1974. 'Objets de l'Age du Bronze découverts aux Prés Madame à Marolles-sur-Seine (Seine-et-Marne)'. BSPF 71, 26-27.
- Gaucher, G., 1976. 'Les civilisations de l'Age du Bronze dans le Bassin parisien et le Nord de la France'. In, Guilaine 1976a, 575-584.
- Gaucher, G. and Mohen, J. -P., 1972. Typologie des objets de l'Age du Bronze en France. Fascicule I: Epées. Paris.
- Gaucher, G. and Mohen, J. -P., 1974. L'Age du Bronze dans le nord de la France. Numéro Spécial du Bulletin de la Société de Préhistoire du Nord. Amiens.
- Gaucher, G. and Robert, Y., 1967. 'Les dépôts de bronze de Cannes-Ecluse (Seine-et-Marne)'. Gallia Préhist. 10, 169-223.
- Gaudron, G., 1951. 'Deux bracelets de la fin de l'Age du Bronze'. BSPF 48, 564-567.
- Gendre, P., 1977. 'Une hache en bronze à rebords trouvée à Flaucourt (Somme)'. RAO 9, 3.
- George, J. and Chauvet, G., 1895. Cachette d'objets en bronze découverte à Vénat, Commune de St.-Yrieux. Extrait du Bulletin de la Société Archéologique et Historique de la Charente, année 1894. Angoulême.

- Gerloff, S., 1975. The Early Bronze Age daggers in Great Britain. PBF VI/2. München.
- Gersbach, E., 1962. 'Vollgriffdolch formen der frühen Urnenfelderzeit nördlich und südlich der Alpen'. JSGU 49, 9-24.
- Gersbach, E., 1968-69. Urgeschichte des Hochrheins. Bad. Fundber. Sonderheft 11. Freiburg i. Br.
- Gersbach, E., 1973. 'Die mittelbronzezeitlichen Wehranlagen der Heuneburg bei Hundersingen a. d. Donau'. Arch. Korr. 3, 417-422.
- Geschwendt, F., 1960. Kreis Geldern. Archäologische Funde und Denkmäler des Rheinlandes 1. Köln/Graz.
- van Giffen, A. E., 1930. Die Bauart der Einzelgräber. Mannus-Bibliothek 44-45. Leipzig.
- van Giffen, A. E., 1935. 'Het Ballooër Veld ndl. van Balloo, Gem. Rolde'. NDV 53, 67-116.
- van Giffen, A. E., 1936. 'De zgn. Galgenberg en het urnenveld in de Boschwachterij, Sleenerzand, Gem. Sleen-Zweeloo'. NDV 54, 104-111.
- van Giffen, A. E., 1938a. 'Een kringgrepuurnenveld te Meppen, Gem. Zweeloo'. NDV 56, 101-103.
- van Giffen, A. E., 1938b. 'Continental bell- or disc-barrows in Holland'. PPS 4, 258-271.
- van Giffen, A. E., 1941. 'Twee samengestelde palissade-heuvels (I en II) bij Nijlande, Gem. Rolde'. NDV 59, 107-112.
- van Giffen, A. E., 1943. 'Een urnenveld te Drouwen, Gem. Borger'. NDV 61, 97-98.
- van Giffen, A. E., 1945. 'Het kringgrepuurnenveld en de grafheuvels O. Z. O. van Gasteren, Gem. Anloo'. NDV 63, 69-134.
- van Giffen, A. E., 1949. 'Het "Noordse Veld" bij Zeijen, Gem. Vries, opgravingen in 1944'. NDV 67, 93-147.
- Giot, P. -R., 1960. Brittany. London.
- Giot, P. -R., 1967. 'Informations archéologiques. Circonscription de Bretagne et des Pays de la Loire'. Gallia Préhist. 10, 333-364.
- Giot, P. -R., 1976. 'Les civilisations de l'Age du Fer en Armorique'. In, Guilaine 1976a, 781-788.
- Giot, P. -R., Bourhis, J. and Briard, J., 1966. Analyses spectrographiques d'objets préhistoriques et antiques. Première série. Travaux... Rennes. Rennes.
- Giot, P. -R., Bourhis, J. and Briard, J., 1970. Analyses ... Deuxième série. Travaux ... Rennes. Rennes.
- Giraud, E., 1955. 'Cachette du Bronze final en Seine-et-Oise'. BSPF 52, 462-463.

- Glasbergen, W., 1954a. 'Barrow excavations in the Eight Beatitudes. I. The excavations'. Palaeohistoria 2, 1-134.
- Glasbergen, W., 1954b. 'Barrow ... II. The implications'. Palaeohistoria 3, 1-204.
- Glasbergen, W., 1957. De urn van Toterfout en de reformatie van de Britse Bronstijd. Groningen/Djakarta.
- Glasbergen, W., 1961. 'De Hilversum-pot van Budel/Weert (Nederlands Limburg)'. Helinium 2, 260-263.
- Glasbergen, W., 1969. Nogmaals HVS/DKS. Haarlemse Voordrachten 28. Haarlem.
- Glob, P. V., 1969. Helleristninger i Danmark. Jysk Arkaeologisk Selskabs Skrifter 7. København.
- Glob, P. V., 1974. The mound people. London.
- Goddard, E. H., 1907-08. 'Notes on objects of "late celtic" character found in Wiltshire'. WAM 35, 389-407.
- Götze, A., 1913. 'Die Tæchnik gegossener Bronzeketten'. In, Montelius Festschrift, 155-175.
- de Goy, P., 1885. L'industrie du bronze en Berry. La cachette de fondeur du Petit-Villatte. Extrait des Memoires de la Société des Antiquaires du Centre. Bourges.
- Gräslund, B., 1967. 'The Herzsprung shield type and its origins'. Acta Arch. 38, 59-71.
- Gray, H. St. G., 1905. 'The "Norris Collection" in Taunton Castle Museum'. Proceedings of the Somersetshire Archaeological and Natural History Society 51, 136-159.
- Gray, H. St. G., 1937. 'Double-looped palstave found at Curland near Taunton'. Ant. J. 17, 63-69.
- Green, C. J. S., 1971. 'Interim report on excavations at Poundbury, Dorchester, 1971'. PDNHAS 93, 154-156.
- Green, H. S., 1973. 'Archaeology and the M5 Motorway. Fifth Report. The excavation of a round cairn on Court Hill, Tickenham, North Somerset, 1969'. Somerset Archaeology and History 117, 33-44.
- Green, M. J., 1977. A guide catalogue to the prehistoric archaeological collections in the Peterborough City Museum. Peterborough.
- Greenhill, B, 1976. Archaeology of the boat. London.
- Greenwell, W., 1902. 'On some rare forms of bronze weapons and implements'. Archaeologia 58, 1-16.
- Greenwell, W. and Brewis, W. P., 1909. 'The origin, evolution and classification of the bronze spearhead in Great Britain and Ireland'. Archaeologia 61, 439-472.
- Grimes, W. F., 1951. The prehistory of Wales. Cardiff.

- Grinsell, L. V., 1941. 'The Bronze Age round barrows of Wessex'. PPS 7, 73-113.
- Grinsell, L. V., 1953. 'A socketed bronze adze from Somerset'. Ant. J. 33, 203-204.
- Grinsell, L. V., 1957. 'An archaeological gazetteer'. In, VCH Wiltshire 1/1. London, 21-279.
- Grinsell, L. V., 1968. Guide catalogue to the south-western British pre-historic collections. Bristol.
- Grinsell, L. V., 1974. 'Disc-barrows'. PPS 40, 79-112.
- Groenman-van Waateringe, W., 1961. 'Nederzettingen van de Hilversum-cultuur te Vogelenzang (N. H.) en Den Haag (Z. H.)'. In, In het voetspoor van A. E. van Giffen. Groningen, 81-92.
- Groenman-van Waateringe, W. and van Regteren Altena, J.F., 1961. 'Een vuurstenen sikkels uit de voor-Romeinse IJzertijd te den Haag'. Helinium 1, 141-146.
- Gross, V., 1883. Les protohelvètes. Paris.
- Gruber, H., 1966. 'Zur Chronologie und Verbreitung der Radnadeln'. Archaeologia Austriaca 39, 1-43.
- Grundy, J. E., 1970. 'Notes on the relationship between climate and cattle housing'. Vernacular Architecture 1, 3-5.
- Guermonprez, H. L. F., 1925. 'Finds of celts at Bognor'. Sx. A. C. 66, 225-231.
- Guilaine, J., 1972. L'Age du Bronze en Languedoc occidental, Roussillon, Ariège. MSPF 9. Paris.
- Guilaine, J., 1976a. La préhistoire française. 2, les civilisations néolithiques et protohistoriques. Paris.
- Guilaine, J., 1976b, 'Systèmes chronologiques et séquences culturelles des civilisations néolithiques et protohistoriques en France'. In, Guilaine 1976a, 17-23.
- Guilbert, G. C., 1975. 'Planned hillfort interiors'. PPS 41, 203-221.
- Guilbert, G. C., 1977. 'The northern Welsh Marches: some recent developments'. In, The Iron Age in Britain—a review, ed. J. Collis. Sheffield, 41-50.
- Gunstone, A. J. H., 1964. 'An archaeological gazetteer of Staffordshire. Part I: chance finds and sites, excluding barrows and their contents'. North Staffordshire Journal of Field Studies 4, 11-45.
- Gunstone, A. J. H., 1971-72. 'Some prehistoric implements from south Staffordshire reported to the Birmingham City Museum'. South Staffordshire Archaeological and Historical Society Transactions 13, 46-56.
- Hachmann, R., 1956. 'Süddeutsche Hügelgräber- und Urnenfelderkulturen und ältere Bronzezeit im westlichen Ostseegebiet'. Offa 15, 43-76.

- Hachmann, R., 1957. Die frühe Bronzezeit im westlichen Ostseegebiet und ihre mittel- und südosteuropäischen Beziehungen. Beihefte zum Atlas der Urgeschichte 6. Hamburg.
- Hachmann, R., 1960. 'Die Chronologie der jüngeren vorrömischen Eisenzeit'. 41: BRGK, 1-276.
- Haffner, A., 1965. 'Späthallstattzeitliche Funde aus dem Saarland'. 12. Bericht der Statlichen Denkmalpflege im Saarland, 7-34.
- Haffner, A., 1976. Die westliche Hunsrück-Eifel-Kultur. RGF 36. Berlin.
- Hahn, A., 1878. 'Age du Bronze—Cachette de fondeur à Luzarches (Seine-et-Oise)'. Congrès Archéologique de France, 14, Senlis 1877. Paris, 150-156.
- Hall, M. and Gingell, C., 1974. 'Nottingham Hill, 1972'. Antiquity 48, 306-309.
- Hamilton, J., 1976. The horse in prehistoric times in the British Isles and adjacent areas of Europe. B Phil. thesis. University of Oxford.
- Hamilton, J. R. C., 1956. Excavations at Jarlshof, Shetland. Ministry of Works Archaeological Reports 1. Edinburgh.
- Handbook, 1932. A handbook of the prehistoric archaeology of Britain. Oxford.
- Hänsel, B., 1968. Beiträge zur Chronologie der mittleren Bronzezeit im Karpatenbecken. Beiträge zur ur- und frühgeschichtlichen Archäologie des Mittelmeer-Kulturräume 7-8. Bonn.
- Hanworth, R. and Tomalin, D. J., 1977. Brooklands, Weybridge: the excavation of an Iron Age and Medieval site 1964-5 and 1970-71. Research Volume of the Surrey Archaeological Society 4. Guildford.
- Harbison, P., 1966. 'Mining and metallurgy in Early Bronze Age Ireland'. North Munster Antiquarian Journal 10, 3-11.
- Harbison, P., 1969. The daggers and halberds of the Early Bronze Age in Ireland. PBF VI/1. München.
- Harbison, P., 1973. 'The Earlier Bronze Age in Ireland'. JRSAI 103, 93-152.
- Harbison, P. and Laing, L. R., 1974. Some Iron Age Mediterranean imports in England. BAR 5. Oxford.
- Harck, O., 1972. Nordostniedersachsen vom Beginn der jüngeren Bronzezeit bis zum frühen Mittelalter. Materialhefte zur Ur- und Frühgeschichte Niedersachsens 7. Hildesheim.
- Harden, D. B., 1952. 'Italic and Etruscan finds in Britain'. Atti del 1 Congresso Internazionale di Preistoria e Protohistoria Mediterranea, Firenze-Napoli-Roma, 1950. Firenze, 315-324.
- Harding, A. and Hughes-Brock, H., 1974. 'Amber in the Mycenaean world'. Annual of the British School at Athens 69, 145-172.

- Harding, D. W., 1972. The Iron Age in the upper Thames basin. Oxford.
- Harding, D. W., 1973. 'Round and rectangular: Iron Age houses, British and foreign'. In, Greeks, Celts and Romans. Archaeology into History I, ed. C. and S. Hawkes. London, 43-62.
- Harding, D. W., 1974. The Iron Age in lowland Britain. London/Boston.
- Harding, J. M., 1964. 'Interim report on the excavation of a Late Bronze Age homestead in Weston Wood, Albury, Surrey'. Sy. A. C. 61, 10-17.
- Harris, E. and J. R., 1965. The oriental cults in Roman Britain. Etudes préliminaires aux religions orientales dans l'Empire Romain 6, Leiden.
- Harrison, R. J., Martí Jusmet, F. and Giró, P., 1974. 'Faience beads and Atlantic bronzes in Catalonia' Madriider Mitteilungen 15, 95-107.
- Hatt, J. J., 1955. 'Chronique de protohistoire, I'. BSPF 52, 96-101.
- Hatt, J. J., 1961. 'Chronique de protohistoire, V'. BSPF 58, 184-195.
- Hatt, J. J., 1962. 'Chronique de protohistoire, VI'. BSPF 59, 654-667.
- Hatt, J. J. and Roualet, P., 1976. 'Le cimetière des Jogasses en Champagne et les origines de la civilisation de La Tène'. RAECE 27, 421-503.
- Hatt, J. J. and Roualet, P., 1977. 'La chronologie de La Tène en Champagne'. RAECE 28, 7-36.
- Haverfield, F., 1900. 'Romano-British Hampshire'. In, VCH Hampshire and the Isle of Wight 1. Westminster, 265-372.
- Haverfield, F., 1905. 'Romano-British Derbyshire'. In, VCH Derbyshire 1. London, 191-263.
- Hawkes, C. F. C., 1931. 'Hill-forts'. Antiquity 5, 60-97.
- Hawkes, C. F. C., 1932. 'Bronzes of the Early Iron Age from Yorkshire'. Ant. J. 12, 453-455.
- Hawkes, C. F. C., 1935. 'The pottery from the sites on Plumpton Plain'. PPS 1, 39-59.
- Hawkes, C. F. C., 1940. 'A site of the Late Bronze—Early Iron Age transition at Totternhoe, Beds.'. Ant. J. 20, 487-491.
- Hawkes, C. F. C., 1942. 'The Deverel urn and the Picardy pin: a phase of Bronze Age settlement in Kent'. PPS 8, 26-47.
- Hawkes, C. F. C., 1943. 'The Early Iron Age settlement at Fengate, Peterborough'. Arch. J. 100, 188-223.
- Hawkes, C. F. C., 1959. 'The ABC of the British Iron Age'. Antiquity 33, 170-182.
- Hawkes, C. F. C., 1960. A scheme for the British Bronze Age.
- Hawkes, C. F. C., 1961a. 'The newly-found gold torc from Moulsoford, Berkshire'. Antiquity 35, 240-242.
- Hawkes, C. F. C., 1961b. 'Gold ear-rings of the Bronze Age, east and west'. Folklore 72, 438-474.

- Hawkes, C. F. C., 1962. 'The archaeological significance of the Mouldsford torc analysis'. Archaeometry 5, 33-37.
- Hawkes, C. F. C., 1966. 'British prehistory: the invasion hypothesis'. Antiquity 40, 297-299.
- Hawkes, C. F. C., 1969. 'Las relaciones Atlánticas del mundo Tartésico'. In, Tartessos y sus problemas. V Symposium internacional de Prehistoria Peninsular, Jerez de la Frontera, 1968. Barcelona, 185-197.
- Hawkes, C. F. C., 1971. 'The Sintra gold collar'. In, BM Festschrift, 38-50.
- Hawkes, C. F. C., 1972. 'Europe and England: fact and fog'. Helinium 12, 105-116.
- Hawkes, C. F. C., 1973. 'Cumulative Celticity in pre-Roman Britain'. Etudes Celtiques 13, 607-628.
- Hawkes, C. F. C., 1974. Review of K. Spindler, Magdalenenberg I-II. Ant. J. 54, 98-100.
- Hawkes, C. F. C., 1976a. 'St. Catharine's Hill, Winchester: the report of 1930 re-assessed'. In, Hillforts, ed. D. W. Harding. London/New York/San Francisco, 59-74.
- Hawkes, C. F. C., 1976b. 'Celts and cultures: wealth, power and art'. In, Celtic Art in Ancient Europe, ed. P. -M. Duval and C. F. C. Hawkes. London, 1-27.
- Hawkes, C. F. C., 1976c. 'North Germany, Britain and the Fengate pin'. Ant. J. 56, 234-235.
- Hawkes, C. F. C. and Clarke, R. R., 1963. 'Gahlstorf and Caistor-on-Sea: two finds of Late Bronze Age Irish gold'. In, Culture and Environment. Essays in honour of Sir Cyril Fox, ed. I. Ll. Foster and L. Alcock. London, 193-250.
- Hawkes, C. F. C. and Glasbergen, W., 1953. 'Les urnes "Deverel" des Pays-Bas et de la Belgique et la céramique "Deverel-Rimbury" du bronze récent anglais'. L'Ant. Class. 22, 434-438.
- Hawkes, C. F. C., Myres, J. N. L. and Stevens, C. G., 1930. 'Saint Catharine's Hill, Winchester'. PHFC 11.
- Hawkes, C. F. C. and Smith, M. A., 1957. 'On some buckets and cauldrons of the Bronze and Early Iron Ages'. Ant. J. 37, 131-198.
- Hawkes, J. n.d. (1937). The Archaeology of the Channel Islands. II The Bailiwick of Jersey. Jersey.
- Hayes, W. C., 1970. 'Chronology, I Egypt to the end of the twentieth dynasty'. In, Cambridge Ancient History³ I/1. Cambridge, 173-193.
- Head, J. F., 1934-40. 'The excavation of the Cop round barrow, Bledlow'. Records of Buckinghamshire 13, 313-351.
- Hedges, J., 1964-75. 'Excavation of two Orcadian burnt mounds at Liddle and Beauquoy'. PSAS 106, 39-98.

- Hémery, M., 1937. 'Une cachette de fondeur de l'Age du Bronze en forêt de Compiègne'. BSPF 34, 155-156.
- Hemp, W. J., 1931. 'The Clynnog collar and the Carnguwch cairn'. Arch. Camb. 86, 354-355.
- Hénault, M., 1923. 'L'Age du Bronze dans la vallée de l'Escaut. Région de Valenciennes'. Pro Nervia 1, 98-102.
- Hencken, H. O'N., 1932. The archaeology of Cornwall and Scilly. London.
- Hencken, H. O'N., 1956. 'Carp's Tongue swords in Spain, France and Italy'. Zephyrus 7, 125-178.
- Hencken, H. O'N., 1971. The earliest European helmets. American School of Prehistoric Research, Bulletin 28. Cambridge, Mass.
- Hennig, H., 1970. Die Grab- und Hortfunde der Urnenfelderkultur aus Ober- und Mittelfranken. MBV 23. Kallmünz.
- Henry, F., 1933. Les tumulus du Département de la Côte-d'Or. Paris.
- Herity, M., 1969. 'Early finds of Irish antiquities from the minute-books of the Society of Antiquaries of London'. Ant. J. 49, 1-21.
- Herity, M. and Eogan, C., 1977. Ireland in prehistory. London/Henley/Boston.
- Hermann, F.-R., 1966. Die Funde der Urnenfelderkultur in Mittel- und Südhessen. RGF 27. Berlin.
- Hermann, F.-R., 1975. 'Hausgrundrisse aus einer urnenfelderzeitlichen Siedlung von Künzing (Niederbayern)'. In, Ausgrabungen in Deutschland 1, 155-170.
- Hingst, H., 1956. 'Ein westeuropäisches Bronzeabsatzbeil aus Gadeland, Kreis Segeburg'. Offa 15, 77-82.
- Hingst, H., 1959. Vorgeschichte des Kreises Stormarn. Die vor- und frühgeschichte lichen Denkmaler und Funde in Schleswig-Holstein 5. Neumünster.
- Hingst, H., 1974. Jevenstedt. Offa-Bucher 27. Neumünster.
- Hinz, H., 1974. 'Funde vorrömischer Zeit aus dem Gebiet der CUT nördlich von Xanten'. In, Beiträge zur Urgeschichte des Rheinlandes I. Rheinische Ausgrabungen 15. Köln, 347-373.
- Hixon, J., 1832. 'Account of some ancient instruments found in quarrying stone of the south side of Rosebury Topping in 1826'. Arch. Ael. ¹ 2, 213.
- Höckmann, O., 1974. 'Zu den Resten nordischer Bronzebecken aus dem Fund von Petit-Villatte'. In, Festgabe Kurt Tackenberg zum 75. Geburtstag. Antiquitas, Reihe 2, 10. Bonn, 85-109.
- Höckmann, O., 1976. 'Zu einem Bruchstück eines nordischen gegossen Bronzebeckens aus Corcellettes in der Schweiz'. Arch. Korr. 6, 131-136.
- Hodder, I., 1974. 'Regression analysis of some trade and marketing patterns'. WA 6, 172-189.

- Hodges, H. W. M., 1954. 'Studies in the Late Bronze Age in Ireland. 1. Stone and clay moulds and wooden models for bronze implements'. UJA 17, 62-80.
- Hodges, H. W. M., 1956. 'Studies in the Late Bronze Age in Ireland, 2. The typology and distribution of bronze implements'. UJA 19, 29-56.
- Hodges, H. W. M., 1957. 'Studies...3. The hoards of bronze implements'. UJA 20, 51-63.
- Hodges, H. W. M., 1960. 'The Bronze Age moulds of the British Isles. Part 2: England and Wales—moulds of stone and bronze'. Sibrium 5, 153-162.
- Hodson, F. R., 1960. 'Reflections on "The ABC of the British Iron Age" '. Antiquity 34, 138-140.
- Hodson, F. R., 1962. 'Some pottery from Eastbourne, the "Marnians" and the pre-Roman Iron Age in southern England'. PPS 28, 140-155.
- Hodson, F. R., 1964. 'Cultural groupings within the British pre-Roman Iron Age'. PPS 30, 99-110.
- Hodson, F. R., 1971. 'Three Iron Age brooches from Hammersmith'. In, BM Festschrift, 50-57.
- Hodson, F. R., 1977. 'Quantifying Hallstatt: some initial results'. American Antiquity 42, 394-412.
- Hollstein, E., 1973. 'Jahrringkurven der Hallstattzeit'. Trierer Zeitschrift 36, 37-55.
- Hollstein, E., 1974. 'Jahrringkurven aus dem prähistorischen Salzbergwerk in Hallstatt'. Arch. Korrr. 4, 49-51.
- Holste, F., 1938. 'Hügelgräber von Lochham, BA. München. In, Marburger Studien, ed. E. Sprockhoff. Darmstadt, 95-104.
- Holste, F., 1939. Die Bronzezeit im nordmainischen Hessen. VF 12. Berlin.
- Holste, F., 1941. 'Ein Prunkbeil von Lignières'. Germania 25, 158-162.
- Holste, F., 1942. 'Ein westeuropäisches Vollgriffschwert aus Süddeutschland'. Germania 26, 4-12.
- Holste, F., 1951. Hortfunde südosteuropas. Marburg-Lahn.
- Holste, F., 1953a. Die bronzezeitlichen Vollgriffschwerter Bayerns. MBVF 4. München.
- Holste, F., 1953b. Die Bronzezeit in Süd- und Westdeutschland. Handbuch der Urgeschichte Deutschlands 1. Berlin.
- Holwerda, J. H., 1908. 'Tumuli bij Nierssen'. OMROL¹ 2, 1-17.
- Holwerda, J. H., 1934a. 'Een vroege Gallisch vorstengraf bij Oss (N. B.)'. OMROL 15, 39-53.
- Holwerda, J. H., 1934b. 'Ein hallstattzeitliches Fürstengrab bei Oss in Holland'. Altschlesien 5, 194-197.

- Holwerda, J. H., n.d. Das Graberfeld von 'de Hamert' Well bei Venlo. Leiden.
- Honywood, T., 1877. 'Discovery of flint implements near Horsham, in St. Leonard's Forest'. Sx. A. C. 27, 177-183.
- Hoof, D., 1970. Die Steinbeile und Steinäxte im Gebeit des Niederrheins und der Maas. Antiquitas, Riehe 2, 9. Bonn.
- von Hügel, Baron. 1906-08. 'Some notes on the gold armilla found in Grunty Fen, together with Mr. Isaac Deck's original account of its discovery in 1844'. Proceedings of the Cambridge Antiquarian Society 12, 96-105.
- Hulst, R. S., 1970. 'Archeologische kroniek van Gelderland 1966-67'. Bijdragen en Mededelingen der Vereniging "Gelre" 64, XXVI-XLVIII. = ROB Overdruk 19.
- Hulst, R. S., 1971. Garderen, grafheuvels op de Bergsham. Archeologische Monumenten in Nederland 2. Bussum/Ammersfoort.
- Hundt, H. J., 1944-50. 'Die Bronzedosen der älteren Bronzezeit Mecklenburgs'. Germania 28, 197-209.
- Hundt, H. J., 1951. 'Ein Hortfund der Periode IV von Bäk, Kreis Herzogtum Lauenburg'. Offa 9, 40-46.
- Hundt, H. J., 1953. 'Über Tüllenhaken und -gabeln'. Germania 31, 145-155.
- Hundt, H. J., 1954. 'Ein Tüllenhaken von Babemhausen, Kr. Dieburg'. Germania 32, 214-215.
- Hundt, H. J., 1955. 'Versuch zur Deutung der Depotfunde der nordischen jüngeren Bronzezeit'. JRGZM 2, 95-140.
- Hundt, H. J., 1956. 'Jungbronzezeitliches Skelettgrab von Steinheim, Kr. Offenbach'. Germania 34, 41-58.
- Hundt, H. J., 1957. 'Keramik aus dem Ende der frühen Bronzezeit von Heubach (Kr. Schwäbisch Gmünd) und Ehrenstein (Kr. Ulm)'. Fundberichte aus Schwaben 14, 27-50.
- Hundt, H. J., 1962. 'Zu einigen westeuropäischen Vollgriffschwerter'. JRGZM 9, 20-57.
- Hundt., H. J., 1971. 'Der Dolchhort von Gau-Bickelheim in Rheinhessen'. JRGZM 18, 1-43.
- van Impe, L., 1972. Een urnenveld te Borsbeek. Arch. Belg. 140. Brussel.
- van Impe, L., 1973. Enkele wapens uit de late Bronztijd te Pulle. Arch. Belg. 150. Brussel.
- van Impe, L., 1976. Ringwalheuvels in de Kempense Bronstijd. Arch. Belg. 190. Brussel.
- van Impe, L. and Beex, G., 1977. Grafheuvels uit de vroege en midden Bronstijd te Weelde. Arch. Belg. 193. Brussel.
- van Impe, L., Beex, G. and Roosens, H., 1973. Het urnenveld op "de Roosen" te Neerpelt. Eindrapport. Arch. Belg. 145. Brussel.

- Jackson, J. S., 1968. 'Bronze Age copper mines on Mount Gabriel, West County Cork, Ireland'. Archaeologia Austriaca 43, 92-114.
- Jacob-Friesen, G., 1956. 'Zwei jungbronzezeitliche Hortfunde aus Niedersachsen'. In, Zur Ur- und Frühgeschichte Nordwestdeutschlands. Festschrift zum 70. Geburtstag von K. H. Jacob-Friesen, ed. P. Zylmann. Hildesheim, 123-143.
- Jacob-Friesen, G., 1967. Bronzezeitliche Lanzenspitzen Norddeutschlands und Skandinaviens. VUSLH 17. Hildesheim.
- Jacob-Friesen, G., 1968. 'Ein Depotfund des Formenkreises um die "Karpfenzungenschwerter" aus der Normandie'. Germania 46, 248-274.
- Jacob-Friesen, G., 1969. 'Skjerne und Egemose. Wagenteile südlicher Provenienz in Skandinavischen Funden'. Acta Arch. 40, 122-158.
- Jacob-Friesen, G., 1972. 'Zwei bemerkenswerte Bronzen der Urnenfelderzeit "aus dem Rhein bei Mainz"'. JRGZM 19, 45-62.
- Jacob-Friesen, G., 1973. Review of Laux 1971 and Bergmann 1970. Germania 51, 568-588.
- Jacob-Friesen, G., 1974. Einführung in Niedersachsens Urgeschichte. 3. Eisenzeit.⁴ VUSLH 15/3. Hildesheim.
- Jacob-Friesen, G., 1975. 'Zu einigen chronologischen und kulturhistorischen Problemen der Periode III'. JIVUF, 119-133.
- Jacobi, G., 1974. Werkzeug und Gerät aus dem Oppidum von Manching. Die Ausgrabungen in Manching, ed. W. Krämer, 5. Wiesbaden.
- Jacobsthal, P., 1944. Early Celtic art. Oxford.
- Janse, O., 1924. 'En nordisk bronspincett fran Hallstattid, funnen i Frankrike'. Fornvännen 19, 301-306.
- Janssen, H. -L., 1935. 'Die Verbreitung der Bronzenadeln mit seitlicher Ose'. PZ 26, 208-218.
- Janssens, P., 1967. 'Bronzen speerpunten uit Antwerpen en Oost-Vlaanderen'. Archeologie, 47-48.
- Jelgersma, S., de Jong, J., Zagwijn, W. H. and van Regteren Altena, J. F., 1970. 'The coastal dunes of the western Netherlands; geology, vegetational history and archaeology'. Mededelingen Rijks Geologische Dienst N. S. 21, 93-167. = ROB Overdruk 24.
- Jensen, J., 1966. 'Griffzungenschwerter der späten nordischen Bronzezeit'. Acta Arch. 37, 25-51.
- Jessup, R. F., 1930. The archaeology of Kent. London.
- Jessup, R. F., 1933. 'Bronzes from the Medway'. Ant. J. 13, 465-466.
- Joachim, H. -E., 1968. Die Hunsrück-Eifel-Kultur am Mittelrhein. Beihefte der BJ 29. Köln/Graz.
- Joachim, H. -E., 1973a. 'Neue älterurnenfelderzeitliche Grabfunde aus dem Neuweider Becken'. Arch. Korr. 3, 191-197.

- Joachim, H. -E., 1973b. 'Neue Metallfunde der Bronze- und Urnenfelderzeit vom Niederrhein'. BJ 173, 257-266.
- Jockenhövel, A., 1971. Die Rasiermesser in Mitteleuropa. PBF VII/1. München.
- Jockenhövel, A., 1972. 'Westeuropäische Bronzen aus der späten Urnenfelderzeit in Südwestdeutschland'. Arch. Korr. 2, 103-109.
- Jockenhövel, A., 1974a. 'Fleischhaken von den Britischen Inseln'. Arch. Korr. 4, 329-338.
- Jockenhövel, A., 1974b. 'Eine Bronzeamphore des 8. Jahrhunderts v. Chr. von Gevelinghausen, Kr. Meschede (Sauerland)'. Germania 52..
- Jockenhövel, A., 1974c. 'Zur Benennung urnenfelderzeitlicher Stufen im östlichen Mitteleuropa'. JIVUF, 57-69.
- Jockenhövel, A., 1974d. 'Zu befestigten Siedlungen der Urnenfelderzeit aus Süddeutschland'. Fundberichte aus Hessen 14, 19-62.
- Jockenhövel, A., 1975. 'Zum Beginn der Jungbronzezeitkultur in Westeuropa'. JIVUF, 134-181.
- Jockenhövel, A. and Smolla, G., 1975. 'Le dépôt de Juvincourt-Damary (Aisne)'. Gallia Préhist. 18, 289-313.
- Joffroy, R., 1960. L'oppidum de Vix et le civilisation hallstattienne final dans l'est de la France. Publications de l'Université de Dijon 20. Paris.
- Joffroy, R., 1975. 'Le ciseau de la Grande Paroisse (Seine-et-Marne)'. Ant. Nat. 7, 32-33.
- Johnson, B., 1975. Archaeology and the M25. (Guildford.)
- Johnson, B. and Needham, S., 1974. 'Egham: a Late Bronze Age mould'. Surrey Archaeological Society Bulletin 112.
- Johnstone, P., 1972. 'Bronze Age sea trial'. Antiquity 46, 269-274.
- Joly, J., 1959. 'Informations archéologiques. Circonscription de Dijon'. Gallia Préhist. 2, 91-109.
- Joly, J., 1970. 'Informations archéologiques. Circonscription de Bourgogne.'. Gallia Préhist. 13, 411-458.
- Jones, M. U. and J. T., 1975. 'The crop-mark sites at Mucking, Essex, England'. In, Recent archaeological excavations in Europe, ed. R. Bruce-Mitford. London, 133-187.
- Jones, S. J., 1931. 'Note on an anvil and a palstave found at Flax Bourton, Somerset'. PUBSS 4, 43-44.
- Jope, E. M., 1958. 'A heavy bronze ring of Italian type from Co. Derry'. UJA 21, 14-16.
- Jope, E. M., 1961. 'Daggers of the Early Iron Age in Britain'. PPS 27, 307-343.
- Jorns, W., 1972. 'Die Kammhelme von Biebesheim'. Fundberichte aus Hessen 12, 76-85.

- Jorrand, C., 1976. 'Les sites fortifiés préhistoriques et protohistoriques en Picardie'. RAO 7, 59-63.
- Joullié, H., 1962. 'Découverte dans la vallée de l'Aisne, non loin de Vailly-sur-Aisne, d'une tombe à incinérations multiples entourée de deux fosses concentriques'. BSPF 66, 457-469.
- Joussaume, R., Mohen, J.-P. and Tardy, P., 1969. 'Préhistoire à Saint-Denis-d'Oleron (Charente-Maritime)'. BSPF 66, 457-469.
- Jouve, M., 1976. 'Sondages sur l'oppidum de Saint-Pierre-en-Chastre à Vieux-Moulin (Oise)'. RAO 8, 39-44.
- Kam, W. H., 1956. 'Vondstmelding van urnen ontdekt nabij het ven "Kraayenstark" Gem. Someren'. BROB 7, 13-14.
- Keiling, H., 1969. Die vorrömische Eisenzeit im Elde-Karthane-Gebeit. Beiträge zur Ur- und Frühgeschichte der Bezirke Rostock, Schwerin und Neubrandenburg 3. Schwerin.
- Kelly, D. B., 1973. 'Archaeological notes from Maidstone Museum'. Archaeologia Cantiana 88, 208-210.
- Kendrick, T. D., 1928. The archaeology of the Channel Islands. I The Bailiwick of Guernsey. London.
- Kendrick, T. D. and Hawkes, C. F. C., 1932. Archaeology in England and Wales 1914-1931. London.
- Kennett, D. H., 1975. 'The Wymington hoard and other hoards and finds of the Late Bronze Age from the south Midlands'. Bedfordshire Archaeological Journal 10, 5-18.
- Kersten, K., n.d. (1935). Zur älteren nordischen Bronzezeit. Veröffentlichungen der Schleswig-Holsteinischen Universitätsgesellschaft, Reihe II, 3. Forschungen zur Vor- und Frühgeschichte aus dem Museum vorgeschichtlicher Altertümer in Kiel 3.
- Kersten, K., 1952. 'Einige Funde der Ilmenaukultur in Schleswig-Holstein'. Offa 11, 10-24.
- Kersten, K., 1958. Die Funde der älteren Bronzezeit in Pommern. 7. Beiheft zum Atlas der Urgeschichte. Hamburg.
- Kersten, K. and la Baume, P., 1958. Vorgeschichte der Nordfrisischen Inseln. Veröffentlichungen des Landesamtes für Vor- und Frühgeschichte in Schleswig. Die vor- und frühgeschichtlichen Denkmäler und Funde in Schleswig-Holstein 4.
- Kersten, W., 1948. 'Die niederrheinische Grabhügelskultur'. BJ 148, 5-80.
- Kilian-Dirlmeier, I., 1975. Gürtelhaken, Gürtelbleche und Blechgürtel der Bronzezeit in Mitteleuropa. PBF XII/2. München.
- Kimmig, W., 1941-47. 'Beiträge zur Frühphase der Urnenfelderkultur am Oberrhein'. Bad. Fundber. 17, 148-176.
- Kimmig, W., 1951. 'Ou en est l'étude de la civilisation des Champs d'Urnes en France, principalement dans l'est?'. RAECE 2, 65-81.
- Kimmig, W., 1954. 'Ou ... suite et fin'. RAECE 5, 7-28, 209-232.

- Kimmig, W., 1955. 'Ein Hortfund der frühen Hgelgrberbronzezeit von Ackenbach, Kr. berlingen'. JRGZM 2, 55-75.
- Kimmig, W., 1962-63. 'Bronzesitulen aus dem Rheinischen Gebirge. Hunsrck-Eifel-Westerwald'. 43.-44. BRGK, 31-106.
- Kimmig, W., 1964. 'Seevlkerbewegung und Urnenfelderkultur'. In, Studien aus Alteuropa I. Kurt Tackenberg gewidmet, ed. R. von Uslar and K. J. Narr. Beihefte der BJ 10/I. Kln/Graz, 220-283.
- Kimmig, W., 1966. Der Kirchberg bei Reusten. Urkunden zur Vor- und Frhgeschichte aus Sdwrttemberg-Hohenzollern 2. Stuttgart.
- Kimmig, W., 1970. 'Zur Frage der Urnenfelderkultur am Niederrhein'. Helinium 10, 39-51.
- Kimmig, W., 1975. 'Early Celts on the upper Danube: the excavations at the Heuneburg'. In, Recent archaeological excavations in Europe, ed. R. Bruce-Mitford. London, 32-64.
- Kimmig, W., 1976. 'Die Heuneburg an der oberen Donau'. In, Ausgrabungen in Deutschland 1, 192-211.
- Kimmig, W. and Gersbach, E., 1971. 'Die Grabungen auf der Heuneburg 1966-1969'. Germania 49, 21-91.
- Kimmig, W. and von Vacano, O. -W., 1973. 'Zu einem Gussform-Fragment einer etruskischen Bronzekanne von der Heuneburg a. d. oberen Donau'. Germania 51, 72-85.
- King, E., 1812. 'A description of antiquities discovered on Hagbourne Hill'. Archaeologia 16, 348-349.
- Kirk, J. R., 1949. 'Bronzes from Woodeaton, Oxon.'. Oxoniensia 14, 1-45.
- Kleeman, O., 1954. Die dreiflgeligen Pfeilspitzen in Frankreich. Akademie der Wissenschaften und der Literatur in Mainz. Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse 4, Wiesbaden.
- Kleeman, O., 1966. 'Der erste Fund vorgeschichtlicher Eisenbarren in Franken'. Mainfrnkisches Jahrbuch fr Geschichte und Kunst 18, 121-134.
- Kleeman, O., 1976. Steinzeitliche und bronzezeitliche Funde aus der ehemaliger Brandenburgischen Neumark. Certamina Praehistorica 3, Bonner Hefter zur Vorgeschichte 11. Bonn, 79-129.
- Klindt-Jensen, O., 1949. 'Foreign influences in Denmark's Early Iron Age'. Acta Arch. 20, 1-229.
- Knapen-Lescrenier, A. -M., 1970. Rpertoire bibliographique des trouvailles archologiques de la province de Namur. Repertoires Archologiques, Srie A, 9. Bruxelles.
- Knight, R. W., Browne, C. and Grinsell, L. V., 1972. 'Prehistoric skeletons from Tormarton'. Transactions of the Bristol and Gloucestershire Archaeological Society 91, 14-17.
- Kolling, A., 1968. Spte Bronzezeit an Saar und Mosel. Saarbrcker Beitrge zur Altertumskunde 6. Bonn.

- Kolling, A., 1975. 'Ein frühlatènezeitliches Wagengrab in Sitzerath, Gemeinde Nonnweiler (Kreis St. Wendel)'. 2. Bericht der Staatlichen Denkmalpflege im Saarland, Abteilung Bodendenkmalpflege, 19-33.
- Kosorić, M., 1972. 'Bronzezeitliche und früheisenzeitliche Hortfunde im mittleren Teil der serbischen Donaugebeit'. Archaeologia Jugoslavica 13, 3-25.
- Kossack, G., 1954a. 'Pferdegeschirr aus Gräbern der älteren Hallstattzeit Bayerns'. JRGZM 1, 111-178.
- Kossack, G., 1954b. Studien zum Symbolgut der Urnenfelder- und Hallstattzeit Mitteleuropas. RGF 20. Berlin.
- Kossack, G., 1959. Südbayern während der Hallstattzeit. RGF 24. Berlin.
- Kossack, G., 1970. Gräberfelder der Hallstattzeit am Main und Frankischer Saale. MBV 24. Kallmünz.
- Kossack, G., 1971. 'The construction of the felloe in Iron Age spoked wheels'. In, Hawkes Festschrift, 141-163.
- Köster, C., 1965-66. 'Beiträge zum Endneolithikum und zur frühen Bronzezeit am nördlichen Oberrhein'. PZ 43/44, 2-95.
- Kostrzewski, J., 1915. 'Der Depotfund von Chrzypsko, Kreis Birnbaum (Pósen)'. PZ 7, 74-78.
- Kostrzewski, J., 1963. 'Palstaves of Great Polish type'. Prace i Materiały 9, 5-11.
- Kostrzewski, J., 1970. Pradzieje Śląska. Wrocław/Warszawa/Kraków.
- Krahe, G., 1960. 'Ein Grabfund der Urnenfelderkultur von Speyer'. In, Pfälzisches Museum Festschrift, ed. K. Schultz. Mitteilungen des Historischen Vereins der Pfalz 58. Speyer, 1-17.
- Kromer, K., 1959. Das Gräberfeld von Hallstatt. Association d'Archéologie Classique. Monographie 1. Firenze.
- Krüger, H., 1961. Die Jastorfkultur in den Kreisen Lüchow-Dannenberg, Lüneburg, Uelzen und Soltau. Göttinger Schriften zur Vor- und Frühgeschichte 1. Neumünster.
- Kruta, V., 1976. Les Celtes. Collection "Que sais-je?" 1649. Paris.
- Kubach, W., 1971. 'Zum Beginn der bronzezeitlichen Radnadeln'. Arch. Korr. 1, 35-37.
- Kubach, W., 1973a. 'Westeuropäische Formen in einem Frühurnenfelderzeitlichen Depotfund aus dem Rhein bei Mainz'. Arch. Korr. 3, 299-307.
- Kubach, W., 1973b. 'Zwei Gräber mit "Sögeler" Ausstattung aus der deutschen Mittelgebirgszone'. Germania 51, 403-417.
- Kubach, W., 1974. 'Zur gruppierung bronzezeitlicher Kulturerscheinungen im hessischen Raum'. JIVUF, 29-50.
- Kubach, W., 1977. Die Nadeln in Hessen und Rheinhessen. PBF XIII/3. München.

- Kytlicová, O., 1964. 'Zur Zeitstellung der Depotfundes des Horizonts Plzeň-Jíkalka'. Arch. Rozh. 16, 516-556.
- Lacroix, B., 1957. La nécropole protohistorique de la Colombine à Champlay-Yonne. Société des fouilles archéologiques et des monuments historiques de l'Yonne. Cahiers d'Archéologie et d'Histoire de l'Art 2. Paris.
- de Laet, S. J., 1961a. Opravingen en vondsten in de Limburgse Kempen. Arch. Belg. 55. Brussel.
- de Laet, S. J., 1961b. 'Quelques précisions nouvelles sur la civilisation de Hilversum en Belgique'. Helinium 1, 120-126.
- de Laet, S. J., 1971. 'Fortifications de l'époque de La Tène en Belgique'. Arch. Rozh. 23, 432-450.
- de Laet, S. J., 1974. Prehistorische kulturen in het zuiden der Lage Landen Wetteren.
- de Laet, S. J., 1976. 'Native and Celt in the Iron Age of the Low Countries'. In, Piggott Festschrift, 191-198.
- de Laet, S. J., van Doorselaer, A., Desittere, M. and Thoen, H., 1970. 'Het urnenveld van Destelbergen'. In, Oudheidkundige opgravingen en vondsten in Oost-Vlaanderen 5, Kultureel Jaarboek voor de Provincie Oost-Vlaanderen 23/2, 1969, 7-21.
- de Laet, S. J. and Mariën, M. -E., 1950. 'La nécropole de Lommel-Kattenbosch'. L'Ant. Class. 19, 309-366.
- de Laet, S. J., Nenquin, J. A. E. and Spitaels, P., 1958. Contributions à l'étude de la civilisation des Champs d'Urnes en Flandre. DAG 4. Brugge.
- de Laet, S. J. and Roosens, H., 1952. Opgravingen van een bronstijdgrafheuvel op de Kluisberg. Arch. Belg. 14.
- Lagrand, C., 1976. 'Les civilisations de l'Age du Bronze en Provence. Le Bronze final'. In, Guilaine 1976a, 452-458.
- Lamarre, H., 1945. 'La cachette de fondeur de Longueville (Seine-et-Marne)'. Rev. Arch.⁶ 23, 98-115.
- Lambot, B., 1975. 'Les fibules du Musée Vivenel trouvées en forêt de Compiègne sous Napoléon III'. CAP 2/2, 15-28.
- Lange, W. R., 1959. 'Ein frühbronzezeitlicher Hortfund von Halle i. W.'. Germania 37, 268-270.
- Langewiesche, F., 1912. 'Ein Bronzefund in Rheda (Westfalen)'. PZ 4, 383-385.
- Langmaid, N., 1971. 'Norton Fitzwarren'. Current Archaeology 3, 116-120.
- Lanting, J. N., 1973. 'Laat-Neolithicum en Vroege Bronstijd in Nederland en N.W. Duitsland: continue ontwikkelingen'. Palaeohistoria 15, 215-317.
- Lanting, J. N., 1976. 'Zwei C14-datiere Funde von spätbronzezeitlicher Keramik mit Kerbschnittverzierung'. Helinium 16, 55-61.

- Lanting, J. N. and van der Waals, J. D., 1974. 'Oudheidkundig onderzoek bij Swalmen I'. OMROL 55, 1-111.
- Laux, F., 1971. Die Bronzezeit in der Lüneburger Heide. VUSLH 18. Hildesheim.
- Laux, F., 1973. Die Fibeln in Niedersachsen. PBF XIV/1. München.
- Laux, F., 1976. Die Nadeln in Niedersachsen. PBF XIII/4. München.
- Laver, H., 1898. 'Founder's hoard at Southchurch'. TEAS² 6, 173.
- Lawson, A. J., 1976. 'An imported bronze collar from Somerset'. Somerset Archaeology and Natural History 120, 109-110.
- Lebel, P., 1953. 'Gués et voies protohistoriques'. RAECE 4, 353-358.
- Lecomte, A., 1975. 'Zwei postneolithische Streitäxte aus der Provinz Ostflandern'. Helinium 15, 162-166.
- Leeds, E. T., 1930. 'A bronze cauldron from the River Cherwell, Oxfordshire, with notes on cauldrons and other bronze vessels of allied types'. Archaeologia 80, 1-36.
- Leeds, E. T., 1936. 'Round barrows and ring-ditches in Berkshire and Oxfordshire'. Oxoniensia 1, 7-23.
- Leman-Delerive, G., 1973. 'La coupe à bords ourlés, chronologie, utilisation et répartition à l'époque de La Tène'. L'Ant. Class. 42, 406-426.
- Letterle, F., 1976. 'Un ensemble de l'Age du Bronze à Cuiry-lès-Chaudardes, Champs-Tortu'. Les fouilles protohistoriques dans la vallée de l'Aisne, rapport d'activité 4. Paris, 173-185.
- Lindblom, K. G., 1939. Wire drawing, especially in Africa. Statens Etnografiska Museum, Smärre Meddelanden 15. Stockholm.
- Lindenschmitt, L., 1870. Die Alterthümer unserer heidnischen Vorzeit 2. Mainz.
- Littauer, M. A. and Crouwel, J., 1977. 'The origin and diffusion of the cross-bar wheel?'. Antiquity 51, 95-105.
- Lobjois, G., 1973. 'Un dépôt de haches à talon à Dommiers (Aisne)'. Cahiers d'Archéologie du Nord-Est 16/2, 41-68.
- Lobjois, G., 1976. 'Objets de l'Age du Bronze trouvés récemment dans le département de l'Aisne'. Cahiers d'Archéologie du Nord-Est 19, 145-154.
- de Loë, A., 1931a. Belgique Ancienne. Musées Royaux d'Art et d'Histoire à Bruxelles. Catalogue descriptif et raisonné. II Les ages du métal. Bruxelles.
- de Loë, A., 1931b. 'Donation Edouard Bernays'. BMRAH 3, 2-9.
- Loewe, G., 1971. Kreis Krempen-Krefeld. Archäologische Funde und Denkmäler des Rheinlandes 3. Düsseldorf.
- Lomborg, E., 1959. 'Donauländische Kulturbeziehungen und die relative Chronologie der frühen nordischen Bronzezeit'. Acta Arch. 30, 51-146.

- Lomborg, E., 1967. 'An amber spacer-bead from Denmark'. Antiquity 41, 221-223.
- Lomborg, E., 1968. 'Den tidlige bronzeaders kronologi'. Aarbøger, 91-152.
- Lomborg, E., 1973. Die Flintdolche Dänemarks. Nordiske Fortidsminder, Serie B, 1. København.
- Longley, D., 1976. 'Excavations on the site of a Late Bronze Age settlement at Runnymede Bridge, Egham'. The London Archaeologist 3, 10-17.
- Longworth, I. H., 1966-67. 'Two gold bracelets from Walderslade, Kent'. British Museum Quarterly 31, 131-133.
- Longworth, I. H., 1970-72. 'Two gold bracelets from Nowton, Bury St. Edmunds'. Proceedings of the Suffolk Institute of Archaeology 32, 271-272.
- Louis, M., Taffanel, O. and Taffanel, J., 1960. Le premier Age du Fer Languedocien 3. Institute International d'Etudes Ligures, Collection de Monographies Préhistoriques et Archéologiques, 3. Bordighera/Montpellier.
- Louwe Kooijmans, L. P., 1972-73. 'The Rhine/Meuse delta. Four studies on its prehistoric occupation and Holocene geology'. OMROL 53-54. = APL 7, 1974.
- Lowery, P. R., Savage, R. D. A. and Wilkins, R. L., 1971. 'Scriber, graver, scorer, tracer: notes on experiments in bronzeworking technique'. PPS 37, 167-182.
- Lowery, P. R., Savage, R. D. A. and Wilkins, R. L., 1972. 'The techniques of the decoration on a disc-butted axe from Romania'. PPS 38, 165-169.
- Lowther, A. W. G., 1939. 'Early Bronze Age—Pagan Saxon Period'. In, A survey of the prehistory of the Farnham district. Guildford, 153-260.
- Lowther, A. W. G., 1949. 'Cast bronze ornament of Late Bronze Age date, from St. Catherine's Hill, Guildford'. Sy. A. C. 51, 143-144.
- Lucas, A. T., 1972. 'Prehistoric block-wheels from Dogarymore, Co. Roscommon, and Rimahoe East, Co. Kildare'. JRSAI 102, 19-48.
- Lux, G. V. and Roosens, H., 1972. Een ronde hut uit de IJzertijd en andere vondsten te Grote-Spouwen (gem. Spouwen). Arch. Belg. 141. Brussel.
- Lynch, F., 1971. Prehistoric Anglesey. Llangefni.
- MacKie, E. W., 1971. 'Some aspects of the transition from the bronze- to iron-using periods in Scotland'. Scottish Archaeological Forum 3, 55-72.
- MacKie, E. W., 1976. 'The vitrified forts of Scotland'. In, Hillforts, ed. D. W. Harding. London/New York/San Francisco, 205-235.
- MacWhite, E., 1944. 'Amber in the Irish Bronze Age'. JCHAS 49, 122-127.
- Maier, R., 1974. Ur- und frögeschichtliche Denkmäler und Funde aus Ostfriesland. Wegweiser zur vor- und Frühgeschichte Niedersachsens 8. Hildesheim.

- Manning, W. H. and Saunders, C., 1972. 'A socketed iron axe from Maids Moreton, Buckinghamshire, with a note on the type'. Ant. J. 52, 276-292.
- Mansfeld, G., 1971. 'Späthallstattzeitliche Kleinfunde von Indelhausen (Kr. Münsingen)'. Fundberichte aus Schwaben 19, 89-117.
- Mansfeld, G., 1973. Die Fibeln der Heuneburg 1950-1970. RGF 33. Berlin.
- Mariën, M. -E., 1945. 'Note sur une bouterolle de l'Age du Bronze découverte à Gentbrugge'. BMRAH 16, 19-21.
- Mariën, M. -E., 1950. 'Les bracelets à grandes oreillettes en Belgique à l'Age du Bronze final'. HMGOG 4/2, 41-77.
- Mariën, M. -E., 1952. Oud-België. Antwerpen.
- Mariën, M. -E., 1956. 'Petit ensemble d'objets de l'Age du Bronze final trouvés à Bois-de-Lessines (Hain.)'. Révue Belge d'Archéologie et d'Histoire de l'Art 25, 77-103.
- Mariën, M. -E., 1957. 'La région bruxellois avant 700'. Cahiers Bruxellois 2, 1-71.
- Mariën, M. -E., 1958. Trouvailles du champ d'urnes et des tombelles hallstattiennes de Court-Saint-Etienne. MRAH Monographies d'Archéologie Nationale 1. Bruxelles.
- Mariën, M. -E., 1961. Les vestiges archéologiques de la région de Lesse-et-homme des origines aux Merovingiens. Bruxelles.
- Mariën, M. -E., 1963. 'Poignard hallstattien trouvé à Luttre (Hainaut, Belgique)'. In, A Pedro Bosch-Gimpera, ed. S. Genovés. México, 307-311.
- Mariën, M. -E., 1964. La nécropole à tombelles de Saint-Vincent. MRAH Monographies d'Archéologie Nationale 3. Bruxelles.
- Mariën, M. -E., 1966. 'Céramique du groupe hallstattien de Saint-Vincent'. Helinium 6, 50-52.
- Mariën, M. -E., 1968-70. 'Boucles d'oreilles en or de la grotte de Han'. BMRAH 40-42, 17-26. = *Belgica Antiqua* 1.
- Mariën, M. -E., 1969. 'Céramiques des champs d'urnes et sepulture à inhumation en Famenne'. In Hommages à Marcel Renaud, ed. J. Bibaur. Collection Latomus 103. Bruxelles, 403-408.
- Mariën, M. -E., 1970. Le Trou de l'Ambre au Bois de Werimont, Eprave. MRAH Monographies d'Archéologie Nationale 4. Bruxelles.
- Mariën, M. -E., 1973a. 'Large bronze spearhead and ferrule found in the cave of Han-sur-Lesse'. Brunsting Festschrift, 127-130.
- Mariën, M. -E., 1973b. 'Un groupe à céramique des Champs d'Urnas en Haute-Belgique'. In, Estudios dedicados al Prof. Dr. Luis Pericot. Universidad de Barcelona, Instituto de Arqueología y Prehistoria, Publicaciones Eventuales 23. Barcelona, 271-282.

- Mariën, M. -E., 1974. 'Les habitats au Trou de Han: éléments chronologiques du Bronze final'. BMRAH 46, 225-231.
- Mariën, M. -E., 1975. 'Epées de bronze "proto-hallstattiennes" et hallstattiennes découvertes en Belgique'. Helinium 15, 14-37.
- Mariën, M. -E., 1976. Review of Reim 1974a. Revue Belge d'Archéologie et d'Histoire de l'Art 45/2, 67-68.
- Mariën, M. -E. and Vanhaeke, L., 1965. Nieuwe vondsten in de grot van Han. Brussel.
- Mariette, H., 1961. 'Une urne de l'Age du Bronze à Hardelot (Pas-de-Calais)'. Helinium 1, 229-232.
- de Marinis, R., 1970. 'Le spade de Monza della tarda Età del Bronzo'. Sibrium 10, 99-107.
- de Marinis, R., 1972. 'Nouvi dati sulle spade della tarda Età del Bronzo nell' Italia settentrionale'. Preistoria Alpina 8, 73-105.
- Marschall, A., Narr, K. J. and von Uslar, R., 1954. Die vor- und frühgeschichtliche Besiedlung des Bergischen Landes. Neustadt an der Aisch.
- Marsille, L., 1921. Catalogue du musée archéologique de la Société Poly-mathique du Morbihan. Vannes.
- Marstrander, S., 1963. Østfolds jordbruksristninger. Instituttet for Sammenlignende Kulturforskning, Serie B: Skrifter 53. Oslo.
- Marstrander, S., 1976. 'Building a hide boat. An archaeological experiment'. International Journal of Nautical Archaeology 5, 13-22.
- Maryon, H., 1949. 'Metal working in the ancient world'. American Journal of Archaeology 53, 93-125.
- Maryon, H., 1971. Metalworking and enamelling.⁵ New York.
- Mathieu, M., 1977. 'Une hache à talon naissant et écusson à Blérencourt (Aisne)'. RAO 9, 4-5.
- Matthews, C. L., 1976. Occupation sites on a Chiltern ridge. Part I: Neolithic, Bronze Age and Early Iron Age. BAR 29. Oxford.
- May, J., 1976. Prehistoric Lincolnshire. History of Lincolnshire I. Lincoln.
- McGrail, S., 1975. 'The Brigg raft re-excavated'. Lincolnshire History and Archaeology 10, 5-13.
- McGrail, S. and Switsur, R., 1975. 'Early British boats and their chronology'. International Journal of Nautical Archaeology 4, 191-200.
- McNeil, R., 1973. 'A report on the Bronze Age hoard from Wick Park, Stogursey, Somerset'. Somerset Archaeology and Natural History 117, 47-64.
- Megaw, B. R. S. and Hardy, E. M., 1938. 'British decorated axes and their diffusion during the earlier part of the Bronze Age'. PPS 4, 272-307.

- Megaw, J. V. S., 1970. Art of the European Iron Age. Bath.
- Megaw, J. V. S., 1975. 'Notes on Bronze Age antiquities in the South Australian Museum'. Records of the South Australian Museum 17/3, 23-29.
- Megaw, J. V. S., 1976. 'Gwithian, Cornwall: some notes on the evidence for Neolithic and Bronze Age settlement'. In, Settlement and Economy, 51-66.
- Meier-Arendt, W., 1969. 'Ein frühbronzezeitlicher Stabdolche im Römisch-Germanischen Museum Köln'. Germania 47, 53-62.
- Meinander, C. F., 1954. Die Bronzezeit in Finnland. Suomen Muinaismuistoyhdistyksen Aikakauskirja 54. Helsinki.
- Melyukova, A. I., 1964. Vooruzhenie skifov. Arkheologiya SSSR, D 1-4. Moskva.
- Menéndez Pidal, R., 1947. Historia de España I/I, España Prehistórica. Madrid.
- Mercer, R. J., 1970. 'Metal arrow-heads in the European Bronze and Early Iron Ages'. PPS 36, 171-213.
- Mercer, R. J., 1976. 'Grimes Graves, Norfolk'. In, Settlement and Economy, 101-111.
- von Merhart, G., 1941. 'Spatzenhausen-Absam-Cascina Ranza'. Germania 25, 204-205.
- von Merhart, G., 1952. 'Studien über einige Gattungen von Bronzegefäßen'. In, Festschrift des Römisch-Germanischen Zentralmuseums in Mainz zur Feier seines hundertjährigen Bestehens 2. Mainz, 1-71.
- von Merhart, G., 1954. 'Panzer-Studie'. In, "Origines": Raccolta di scritti in onore di Mons. Giovanni Baserga. Rivista Archeologica dell'Antica Provincia e Diocesi di Como. 33-61.
- von Merhart, G., 1956. 'Über blecherne Zierbuckel (Faleren)'. JRGZM 3, 28-116.
- von Merhart, G., 1956-57. 'Geschmürte Schienen'. 37.-38. BRGK, 91-47.
- Mertens, J., 1951. Een urnengraving te Aarchot-Langdorp (Brab.). Arch. Belg. 5. Brussel.
- Miles, W. A., 1826. A description of the Deverel barrow... London.
- Millotte, J.-P., 1959. 'Essai sur les relations entre l'Est et l'Ouest de la France aux ages des métaux'. Ogam 11, 131-154.
- Millotte, J.-P., 1963. Le Jura et les plaines de Saône aux ages des métaux. Annales Littéraires de l'Université de Besançon 59. Paris.
- Millotte, J.-P., 1965a. Carte archéologique de la Lorraine. Annales Littéraires de l'Université de Besançon 73. Paris.
- Millotte, J.-P., 1965b. 'Informations archéologiques. Circonscription de Besançon'. Gallia Préhist. 8, 83-102.

- Millotte, J.-P. , Cordier, G. and Abauzit, P. , 1968. 'Essai de typologie protohistoriques: les haches à ailerons medians'. RAECE 19, 7-67.
- Millotte, J.-P. and Riquet, R. , 1959. 'La cachette de bronze de Notre Dame d'Or (Vienne)'. Gallia Préhist. 2, 71-80.
- Millotte, J.-P. and Vignard, M. , 1960. Catalogue des collections archéologiques de Lons-le-Saunier. I Les antiquités de l'Age du Bronze. Annales Littéraires de l'Université de Besançon 36. Paris.
- Milojčić, V. , 1960. Review of Hachmann 1957. Germania 38, 277-231.
- Moddermann, P. J. R. , 1959. 'Een "Hilversum" pot met wikkeldraadstempel versierd en een bronzen naald uit Vorstenbosch (Noord-Brabant)'. BROB 9, 288-289.
- Moddermann, P. J. R. , 1960-61. 'Een palstave uit Epe, Gelderland'. BROB 10-11, 546-548.
- Moddermann, P. J. R. , 1964a. 'The chieftain's grave of Oss reconsidered'. Bulletin van de Vereeniging tot Bevordering der Kennis van de Antieke Beschaving te 's-Gravenhage, 39, 57-62.
- Moddermann, P. J. R. , 1964b. 'Stenen bijl met ijzeren schachthuls uit de Waal bij Nijmegen'. BROB 14, 69-73.
- Moddermann, P. J. R. and Louwe Kooijmans, L. P. , 1966. 'The Heibloem, a cemetery from the Late Bronze Age and Early Iron Age between Veldhoven and Steensel, Prov. Noord-Brabant'. APL 2, 9-26.
- Mohen, J.-P. , 1968. 'Les bronzes protohistoriques de Paris et de sa région au Musée de l'Armée (Invalides)'. BSPF 65, 779-814.
- Mohen, J.-P. , 1971. 'Quelques épées à poignée métallique de l'Age du Bronze conservée au Musée des Antiquités Nationales'. Ant. Nat. 3, 29-46.
- Mohen, J.-P. , 1972. 'Que savons-nous de l'Age du Bronze dans le Nord de la France?'. BSPF 69, 444-464.
- Mohen, J.-P. , 1973. 'Les moules en terre cuite des bronziers protohistoriques'. Ant. Nat. 5, 33-44.
- Mohen, J.-P. , 1975. 'Sépulture féminine et sépulture masculine du VII^e siècle avant J.-C. dans le tumulus J d'Ibos (Hautes-Pyrénées)'. Ant. Nat. 7, 34-41.
- Mohen, J.-P. and Coffyn, A. , 1970. Les nécropoles hallstattiennes de la région d'Arcachon. BPH 11. Madrid.
- Monckton, Mr. , 1933. 'A bronze hoard from the City'. Ant. J. 13, 297-299.
- Monteagudo, L. , 1965. 'Hachas prehistóricas de Europa occidental'. Conimbriga 4, 13-35.
- Montelius, O. , 1908. 'The chronology of the British Bronze Age'. Archaeologia 61, 97-162.
- Montelius, O. , 1913. 'Wann begann die allgemeine Verwendung des Eisens?'. PZ 5, 289-330.

- Moore, C. N., 1976. 'Imported palstaves of French origin found in Hampshire'. PHFC 33, 112-113.
- Moore, C. N. and Lewis, E., 1969. 'A hoard of Breton socketed axes from Nether Wallop'. PHFC 26, 19-20.
- Moore, C. N. and Rowlands, M.J., 1972. Bronze Age metalwork in Salisbury Museum. Salisbury.
- Moorey, P. R. S., 1968. 'The earliest Near Eastern spoked wheels and their chronology'. PPS 34, 430-432.
- Mordant, C., 1975. 'La nécropole de La Colombine à Champlay (Yonne) d'après les fouilles et la collection de P. Jacquelin'. RAECE 26, 423-441.
- Mordant, C. and D., 1970. Le site protohistorique des Gours-aux-Lions. MSPF 8. Paris.
- Mordant, C. and D. and Prampart, J.-Y., 1976. Le dépôt de bronze de Villethierry (Yonne). IX^e supplément à Gallia Préhist. Paris.
- Moreau, F., 1891. Supplément a l'Album Caranda. Les fouilles de 1891 aux gréviers de Ciry-Salsogne, deuxième année. Saint-Quentin.
- de Mortillet, G. and A., 1903. Musée préhistorique.² Paris.
- Mozsolics, A., 1957. 'Archäologische Beiträge zur Geschichte der grossen Wanderung'. AAASH 8, 119-156.
- Mozsolics, A., 1967. Bronzefunde des Karpatenbeckens. Depotfundhorizonte von Hajdúsámson und Kosziderpadlás. Budapest.
- Mozsolics, A., 1971. 'Some remarks on "Peschiera" bronzes in Hungary'. In, Hawkes Festschrift, 57-76.
- Mozsolics, A., 1973. Bronze- und Goldfunde des Karpatenbeckens. Depotfundhorizonte von Forró und Ópályi. Budapest.
- von Müller, A., 1973. 'Ein bronzezeitlicher Hortfund von Berlin-Tegel'. Ausgrabungen in Berlin 4, 50-56.
- Müller, D. W., 1972. 'Gedanken zu einer neuentdeckten Hakenspirale aus Eschenbergen, Kreis Gotha'. Alt-Thüringen 12, 114-130.
- Müller, S., 1920. 'Nye Fund og Former'. Aarbøger, 88-111.
- Müller-Karpe, H., 1955. 'Zu südwestdeutschen Vollgriffschwerten der Bronzezeit'. Germania 33, 24-30.
- Müller-Karpe, H., 1956. 'Das urnenfelderzeitliche Wagengrab von Hart an der Alz, Oberbayern'. Bayerische Vorgeschichtsblätter 21, 46-75.
- Müller-Karpe, H., 1958. 'Neues zur Urnenfelderzeit Bayerns'. Bayerische Vorgeschichtsblätter 23, 4-33.
- Müller-Karpe, H., 1959. Beiträge zur Chronologie der Urnenfelderzeit nördlich und südlich der Alpen. RGF 22. Berlin.
- Müller-Karpe, H., 1961. Die Vollgriffschwerter der Urnenfelderzeit aus Bayern. MBVF 6. München.

- Müller-Karpe, H., 1962. 'Zur spätbronzezeitlichen Bewaffnung in Mitteleuropa und Griechenland'. Germania 40, 255-287.
- Müller-Karpe, H., 1966. 'Ein Bronzemesser von Zürich-Bauschanze'. In, Vogt Festschrift, 97-100.
- Müller-Karpe, H., 1974. 'Zur Definition und Benennung chronologischer Stufen der Kupferzeit, Bronzezeit und älteren Eisenzeit'. JIVUF, 7-18.
- Müller-Karpe, H., 1975. 'Jahresbericht des Frankfurter Instituts für Vorgeschichte'. JIVUF, 182-185.
- Müller-Wille, M., 1977. 'Bäuerliche Siedlungen der Bronze- und Eisenzeit in den Nordseegebieten'. In, Das Dorf der Eisenzeit und des frühen Mittelalters, ed. H. Jankuhn, R. Schützeichel and F. Schwind. Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-Historische Klasse³, 101. Göttingen, 153-218.
- Munro, R., 1890. The lake-dwellings of Europe. London.
- Musson, C. R., 1974. The Breiddin 1969-74. (Typescript.) Shrewsbury.
- van Muyden, B. and Colomb, A., 1896. Musée Cantonal Vaudois, Antiquités Lacustres, Album. Lausanne.
- Nan Kivell, R. de C., 1927-29. 'Objects found during excavations on the Romano-British site at Cold Kitchen Hill, Brixton Deverill, 1926'. WAM 44, 138-142.
- Nash-Williams, V. E., 1933. 'A late bronze hoard from Cardiff'. Ant. J. 13, 299-300.
- Nash-Williams, V. E., 1939. 'An Early Iron Age coastal camp at Sudbrook, near the Severn Tunnel, Monmouthshire'. Arch. Camb. 94, 42-79.
- Nenquin, J., 1975. 'The staghorn cheekpiece of a horse-bit found at Eke (East Flanders)'. Helinium 15, 38-42.
- Nerman, B., 1954. 'Yngre Bronsaldern - en första Svensk vikingatid'. Fornvännen 49, 257-285.
- Nicolardot, J.-P. and Gaucher, G., 1975. Typologie des objets de l'Age du Bronze en France. Fascicule V: Outils. Paris.
- Nicolas, A., 1976. 'Une épée du Bronze final trouvée a Nanterre, au musée de Clamecy'. BSPF 73, 264-265.
- Nicolas, A., Duval, A., Eluère, C., Mohen, J.-P. and Mordant, C., 1975. 'L'Age du Bronze au Musée d'Auxerre'. RAECE 26, 135-209.
- Niesiołowska-Wedzka, A., 1974. Anfänge und Entwicklung der Burgen der Lausitzer Kultur. Polskie Badania Archeologiczne 18. Wrocław/Warszawa/Kraków/Gdańsk.
- Nordén, A., 1925. 'Brandskogs-skeppet'. Fornvännen 20, 376-391.
- Northover, J. P., 1977. 'Bronze in the British Bronze Age'. In, Aspects of early metallurgy, ed. W. A. Oddy. (London), 63-70.

- Norwich. 1966. Bronze Age metalwork in Norwich Castle Museum. Norwich.
- Norwich. 1977. Bronze ... Museum.² Norwich.
- Nouel, A., 1957. 'La cachette de bronze de Boissy-aux-Cailles (Seine-et-Marne) et les cachettes du centre de la France'. RAECE 8, 298-311.
- Novák, P., 1975. Die Schwerter in der Tschechoslowakei I. PBF IV/4. München.
- Novotná, M., 1970a. Die Axte und Beile in der Slowakei. PBF IX/3. München.
- Novotná, M., 1970b. Die Bronzefundstücke in der Slowakei: Spätbronzezeit. Archaeologica Slovaca, Fontes 9. Bratislava.
- Novotný, B., 1966. 'Ein Panzerfund aus Čierna nad Tisou'. Sborník Filozofickej Fakulty University Komenského, Musaica 17 (6), 27-34.
- Nowothnig, W., 1958. 'Der frühbronzezeitliche Grabfund von Ehestorf, Kreis Bremervörde'. Die Kunde 9, 152-167.
- Nowothnig, W., 1962. 'Der Bronzefund von Barrien-Bülten im Kreise Grafschaft Hoya'. NNU 31, 136-140.
- Nylén, E., 1974. 'Bronze, Eisen und Gesellschaft'. Die Kunde 25, 103-110.
- Oakley, K. P., 1943. 'A note on the late post-glacial submergence of the Solent margins'. PPS 9, 56-59.
- O'Connor, B., 1973-75. 'Two groups of prehistoric pottery from Kettleburgh'. Proceedings of the Suffolk Institute of Archaeology 33, 231-240.
- O'Connor, B., 1975. 'Six prehistoric phalerae in the London Museum and a discussion of other phalerae from the British Isles'. Ant. J. 55, 215-226.
- O'Connor, B., 1976a. 'Ein Griffangelschwert aus der Seine bei Paris'. Arch. Korrr. 6, 207-208.
- O'Connor, B., 1976b. 'A Nordic socketed axe from near Braintree'. TEAS³ 8, 279-281.
- O'Connor, B., 1977. 'Two prehistoric French bronzes in English collections'. Arch. Atlant. 2, 83-85.
- O'Connor, B., forthcoming a. 'A Bronze Age socketed tool from Blewbury'. Oxoniensia 42.
- O'Connor, B., forthcoming b. 'A late Urnfield pendant from the Thames at Old England'. Transactions of the London and Middlesex Archaeological Society, 29.
- O'Kelly, M. J., 1954. 'Excavations and experiments in ancient Irish cooking-places'. JRSAI 84, 105-155.
- Oldeberg, A., 1974. Die ältere Metallzeit in Schweden. Stockholm.
- O'Neil, B. H. St. J., 1942-43. 'Excavations at Fridd Faldwyn Camp, Montgomery, 1937-39'. Arch. Camb. 97, 1-57.

- Organ, R. M., 1953-56. 'Further notes on an anvil and a palstave found at Flax Bourton, Somerset'. PUBSS 7, 184-186.
- Ó Ríordáin, S. P., 1939. 'The halberd in Bronze Age Europe'. Archaeologia 86, 195-321.
- Ó Ríordáin, S. P., 1946. 'Prehistory in Ireland, 1937-46'. PPS 12, 142-171.
- Ó Ríordáin, S. P., 1954. 'Lough Gur excavations: Neolithic and Bronze Age houses on Knockadoon'. PRIA 56, 297-459.
- Osborne, A. O'N., 1939. 'The Hayne Wood hoard'. Ant. J. 19, 202-206.
- Osterwalder, C., 1971. Die mittlere Bronzezeit im Schweizerischen Mittelland und Jura. Monographien zur Ur- und Frühgeschichte der Schweiz 19. Basel.
- Ottenjann, H., 1969. Die nordischen Vollgriffschwerter der älteren und mittleren Bronzezeit. RGF 30. Berlin.
- Pallotino, M., 1960. 'Sulla cronologia dell'Età del Bronzo Finale e dell'Età del Ferro in Italia'. Studi Etruschi 28, 11-47.
- de Palol, P., 1958. La necrópolis hallstättica de Agullana (Gerona). BPH 1. Madrid.
- Parducz, M., 1973. 'Probleme der Skythenzeit im Karpathenbecken'. AAASH 25, 27-63.
- Passmore, A. D., 1905-06. 'Notes on recent discoveries'. WAM 34, 308-312.
- Patay, P., 1968. 'Urnenfelderzeitliche Bronzeschilde im Karpatenbecken' Germania 46, 241-248.
- Patay, P., 1969. 'Der Bronzefund von Mezokovesd'. AAASH 21, 167-216.
- Patte, E., 1971. 'Quelques objets de l'Age du Bronze du Valois'. BSPF 68, 159-160.
- Patte, E., 1975. 'Précy-sur-Oise et Pontpoint'. CAP 2/1, 5-12.
- Pauli, L., 1972. Untersuchungen zur Späthallstattkultur in Nordwürttemberg. HBA 2/1. Hamburg.
- Pauli, L., 1975. Die Gräber vom Salzberg zu Hallstatt. Mainz.
- Paulík, J., 1968. 'Panzer der jüngeren Bronzezeit aus der Slowakei'. 49. BRGK, 41-61.
- Pearce, S. M., 1970-71. 'A Late Bronze Age hoard from Glentanar, Aberdeenshire'. PSAS 103, 57-64.
- Pearce, S. M., 1971-74. 'The finds of Bronze Age material from Kent's Cavern, Torquay'. Torquay Natural History Society Transactions and Proceedings 16, 176-195.
- Pearce-Serocold, O., 1933. 'Bronze hoard from Burnham', Ant. J. 13, 55.
- Periodisering. 1965-66. 'De periodisering van de Nederlandse prehistorie'. BROB 15-16, 7-11.

- Peroni, R., 1956. 'Zur Gruppierung mitteleuropäischer Griffzungendolche der späten Bronzezeit'. Bad. Fundber. 20, 69-92.
- Peroni, R., 1973. Studi di cronologia hallstattiana. Roma.
- Pescheck, C., 1971. 'Zur Auffindung des urnenfelderzeitlichen Hortfundes von Reupelsdorf (Unterfranken)'. Arch. Korr. 1, 199-202.
- Pescheck, C., 1972. 'Ein reicher Grabfund mit Kesselwagen aus Unterfranken'. Germania 50, 29-56.
- Petersen, E., 1929. Die frühgermanische Kultur in Ostdeutschland und Polen. VF 2/2. Berlin.
- Petrequin, P., Urlacher, J.-P. and Vuallat, D., 1969. 'Habitat et sépultures de l'Age du Bronze final à Dampierre-sur-le-Doubs (Doubs)'. Gallia Préhist. 12, 1-35.
- Philippe, J., 1927. Cinq années de fouilles au Fort-Harrouard 1921-1925. Société Normande d'Etudes Préhistoriques. Bulletin hors série XXVbis. Rouen.
- Philippe, J., 1936. 'Le Fort-Harrouard'. L'Anthropologie 46, 257-301.
- Phillips, C. W., 1931. 'Final report on the excavations of Merlin's Cave, Symonds' Yat'. PUBSS 4/1, 11-33.
- Phillips, C. W., 1935. 'The excavation of the Giant's Hill long barrow, Skendleby, Lincolnshire'. Archaeologia 85, 37-106.
- Picard, C., 1961. 'Informations archéologiques. Circonscription de Paris (région sud)'. Gallia 19, 311-344.
- Piggott, C. M., 1946. 'The Late Bronze Age razors of the British Isles'. PPS 12, 121-141.
- Piggott, C. M., 1949. 'A Late Bronze Age hoard from Blackrock in Sussex and its significance'. PPS 15, 107-121.
- Piggott, S., 1938. 'The Early Bronze Age in Wessex'. PPS 4, 52-106.
- Piggott, S., 1952-53. 'A Late Bronze Age hoard from Peebleshire'. PSAS 87, 175-186.
- Piggott, S., 1968. 'The earliest wheeled vehicles and the Caucasian evidence'. PPS 34, 266-318.
- Piggott, S., 1973. 'The final phase of bronze technology'. In, VCH Wiltshire 1/2. Oxford, 376-407.
- Piggott, S. and C. M., 1944. 'Excavation of barrows on Crichel and Launceston Downs, Dorset'. Archaeologia 90, 47-80.
- Pingel, V., 1974. 'Bemerkungen zu den ritzverzierten Stelen und zur beginnenden Eisenzeit im südwesten der Iberischen Halbinsel'. In, Festschrift W. Dehn. HBA 4. Hamburg, 1-19.
- Piningre, J.-F., 1976. 'Quelques objets de l'Age du Bronze et du Néolithique des marais de la Deule'. Révue du Nord 58, 7-13.

- Piningre, J.-F., 1977. 'Fouille de sauvetage de deux enclos circulaires concentriques à Conchil-le-Temple (Pas-de-Calais)'. Septentrion 7, 17-22.
- Pittioni, R., 1951. 'Prehistoric copper-mining in Austria: problems and facts'. ULIA Seventh Annual Report, 16-43.
- Pitt Rivers, A. H. L. F., 1888. Excavations in Cranborne Chase II. London.
- Pitt Rivers, A. H. L. F., 1892. Excavations ... III. London.
- Pitt Rivers, A. H. L. F., 1898. Excavations ... IV. London.
- Pleinerová, I., 1973. 'Bronzegefäße in der Bylaner Kultur'. Pam. Arch. 54/2, 272-300.
- Plot, R., 1686. The natural history of Stafford-shire. Oxford.
- Podborský, V., 1970. Mähren in der Spätbronzezeit und an der Schwelle der Eisenzeit. Opera Universitatis Purkynianae Brunensis Facultas Philosophica 142. Brno.
- Polenz, H., 1973. 'Zu den Grabfunden der Späthallstattzeit im Rhein-Main-Gebiet'. 54. BRGK, 107-202.
- Pollit, W., 1926. 'Bronze-founder's hoard from Southend-on-Sea'. Ant. J. 6, 309.
- Pollit, W., 1930. 'Bronze Age find in Southend-on-Sea'. TEAS² 19, 311-313.
- Pollit, W., 1932. 'Bronze objects from south-east Essex'. Ant. J. 12, 74.
- Popović, D., 1964. 'Der Depotfund aus Noćaj-Salaš'. RVM 12-13, 5-21.
- Poste, B., 1858. 'Romano-British antiquities in bronze found in the parish of Marden, Kent'. Journal of the British Archaeological Association¹ 14, 257-262.
- Powell, T. G. E., 1948. 'A Late Bronze Age hoard from Welby, Leicestershire'. Arch. J. 105, 27-40.
- Powell, T. G. E., 1953. 'The gold ornament from Mold, Flintshire, north Wales'. PPS 19, 161-179.
- Powell, T. G. E., 1958. The Celts. London.
- Powell, T. G. E., 1973-74. 'The Sintra collar and the Shannongrove gorget: aspects of Late Bronze Age goldwork in the west of Europe'. North Munster Antiquarian Journal 16, 3-12.
- Powell, T. G. E., 1976. 'The inception of the Iron Age in temperate Europe'. PPS 42, 1-14.
- Powell-Cotton, P. H. G. and Crawford, O. G. S., 1924. 'The Birchington hoard'. Ant. J. 4, 220-226.
- Pownall, T., 1786. 'An account of some Irish antiquities'. Archaeologia 3, 355-370.
- Primas, M., 1971. 'Der Beginn der Spätbronzezeit im Mittelland und Jura'. In, UFAS, 55-70.

- Proudfoot, V. B., 1955. The Downpatrick gold find. Archaeological Research Publications (Northern Ireland) 3. Belfast.
- Pryor, F., 1977. 'Fengate 1976'. Durobrivae 5, 14-17.
- Raepsaet-Charlier, M.-T., 1971. 'La stratigraphie du Trou del Leuve à Sinsin (Namur)'. Annales de la Société Archéologique de Namur 56, 5-96.
- Raftery, B., 1975. 'A Late Bronze Age bar toggle from Ireland'. Arch. Atlant. 1, 83-89.
- Raftery, B., 1976a. 'Dowris, Hallstatt and La Tène in Ireland: problems of the transition from bronze to iron'. In, Acculturation and continuity in Atlantic Europe. Papers presented at the IV Atlantic Colloquium, Ghent 1975, ed. S. J. de Laet. DAG 16. Brugge, 189-197.
- Raftery, B., 1976b. 'Rathgall and Irish hillfort problems'. In, Hillforts, ed. D. W. Harding. London/New York/San Francisco, 339-357.
- Raftery, J., 1961. 'The Derrinboy hoard, Co. Offaly'. JRSAI 91, 55-58.
- Raftery, J., 1971. 'A Bronze Age hoard from Ballytegan, County Laois'. JRSAI 101, 85-100.
- Raftery, J., 1972. 'Iron Age and Irish Sea: problems for research'. In, The Iron Age in the Irish Sea province, ed. C. Thomas. CBA Research Report 9. London, 1-10.
- Rahtz, P., 1976. 'Buildings and rural settlement'. In, The Archaeology of Anglo-Saxon England, ed. D. M. Wilson. London, 49-98.
- Randsborg, K., 1968. 'Von Periode II zu III'. Acta Arch. 39, 1-142.
- Randsborg, K., 1970. 'Zwei Peschiera-Dolche aus Südsandinavien'. Acta Arch. 41, 191-195.
- Randsborg, K., 1972. From Period III to Period IV. Publications of the National Museum, Archaeological-Historical Series I, 15. Copenhagen.
- Rathleigh, P., 1809. Archaeologia 12, 414, pl. 51, fig. 8.
- Read, C. H., 1895-97. '...notes on two hoards of bronze implements from Grays Thurrock, Essex, and Southall, Middlesex ...'. PSAL² 17, 327-330.
- Read, C. H., 1901-03. PSAL² 19, 13-16.
- Reim, H., 1974a. Die spätbronzezeitlichen Griffplatten-, Griffdorn- und Griffangelschwerter in Ostfrankreich. PBF IV/3. München.
- Reim, H., 1974b. 'Bronze- und Urnenfelderzeitliche Griffangelschwerter im nordwestlichen Voralpenraum und in Oberitalien'. Arch. Korr. 4, 17-26.
- Reinecke, P., 1956. 'Der Bamberger Bronzeschildfund'. JRGZM 3, 23-27.
- Richlý, H., 1893. Die Bronzezeit in Böhmen. Prag.
- Richter, I., 1970. Der Arm- und Beinschmuck der Bronze- und Urnenfelderzeit in Hessen und Rheinhessen. PBF X/1. München.

- von Richtofen, B., 1926. Die ältere Bronzezeit in Schlesien. VF 3. Berlin.
- Ridgeway, W., 1919. 'An Irish decorated socketed bronze axe'. Man 19, 161-164.
- Ridgeway, W. and Smith, R., 1905-07. '...early Italian brooches ...'. PSAL² 21, 97-118.
- Ridgway, D. and F. R., 1976. 'From Ischia to Scotland: better configurations in Old World prehistory'. In, Piggott Festschrift, 145-152.
- Riek, G., 1942. 'Ein Fletthaus aus der Wende ältere-jüngere Hunsrück-Eifel-Kultur bei Befort in Luxemburg'. Germania 26, 26-34.
- Riek, G., 1962. Der Hohmichele. RGF 25. Berlin.
- Rieth, A., 1942. Die Eisentechnik der Hallstattzeit. Mannus-Bücherei 70. Leipzig.
- Říhorský, J., 1966. 'Die Anfänge der jüngeren (Podoler) Phase des mitteldonauländischen Kreises der Urnenfelderkultur'. Pam. Arch. 57/2, 459-534.
- Říhorský, J., 1969. 'Zur Kenntnis der Haustypen in der mitteldonauländischen Urnenfelderkultur'. In, Beiträge zur Lausitzer Kultur, ed. W. Coblentz. AFSB Beiheft 7. Berlin, 229-252.
- Říhorský, J., 1972. Die Messer in Mähren und dem Ostalpengebiet. PBF VII/1. München.
- Ritchie, A., 1970. 'Palisaded sites in north Britain: their context and affinities'. Scottish Archaeological Forum 2, 48-67.
- Robertson, A. S., 1974. 'Romano-British coin hoards: their numismatic, archaeological and historical significance'. In, Coins and the Archaeologist, ed. J. Casey and R. Reece. BAR 4. Oxford. 12-36.
- Robinson, P. H., 1974. 'A new palstave from Norbury, Staffordshire'. Staffordshire Archaeology 3, 23-26.
- Roe, F. E. S., 1966. 'The battle-axe series in Britain'. PPS 32, 199-245.
- Roes, A., 1952. 'An iron razor of Danish Bronze-Age type, Sittard (Limburg)'. BROB 3, 50-52.
- Roosens, H. and Beex, G., 1961. De opgravingen in het urnenveld "de Roosen" te Neerpelt in 1960. Arch. Belg. 58. Brussel.
- Roosens, H. and Beex, G., 1962. Het onderzoek van het urnenveld "de Roosen" te Neerpelt in 1961. Arch. Belg. 65. Brussel.
- Roosens, H., Beex, G. and van Impe, L., 1975. Bijzettingen uit de urnenveldentijd te Neerpelt Grote Heid en Achelse Dijk. Arch. Belg. 178. Brussel.
- Roosens, H. and Meex, F., 1975. Vlakgraven uit de late Bronstijd te Zittaart, Gem. Meerhout. Arch. Belg. 173. Brussel.
- Roska, M., 1942. Thesaurus Antiquitatum Transsilvanicarum. I Praehistorica. Kolozsvár.

- Roth, H., 1974. 'Ein Ledermesser der Atlantischen Bronzezeit aus Mittelfranken'. Arch. Korr. 4, 37-47.
- Roudil, J.-L., 1972. L'Age du Bronze en Languedoc oriental. MSPF 10. Paris.
- Roussot-Larroque, J., 1971. 'Le dépôt du Bronze final de la Sablière a Saint-Georges-d'Oleron (Charente-Maritime)'. BSPF 68, 587-593.
- le Roux, C.-T., 1975. 'Informations archéologiques. Circonscription de Bretagne'. Gallia Préhist. 18, 511-539.
- le Roux, C.-T. and Briard, J., 1970. 'Dépôts de l'Age du Bronze inédits ou mal connus du Finistère'. Ann. Bret. 77, 37-55.
- Rowlands, M. J., 1971a. 'A group of incised decorated armrings and their significance for the Middle Bronze Age of southern Britain'. In, BM Festschrift, 183-199.
- Rowlands, M. J., 1971b. 'The archaeological interpretation of prehistoric metalworking'. WA 3, 210-224.
- Rowlands, M. J., 1976. The production and distribution of metalwork in the Middle Bronze Age in southern Britain. BAR 31. Oxford.
- Rowlett, R. M. and E. S. J. and Boureaux, M., 1969-70. 'A rectangular early La Tène Marnian house at Chassemy (Aisne)'. WA 1, 106-135.
- Ruoff, U., 1974. Zur frage der Kontinuität zwischen Bronze- und Eisenzeit in der Schweiz. Basel.
- Rusu, M., 1963. 'Die Verbreitung der Bronzehorte in Transsilvanien vom Ende der Bronzezeit bis in der mittlere Hallstattzeit'. Dacia² 7, 177-210.
- Rusu, M., 1966. 'Le dépôt d'objets en bronze de Balsa'. Sargetia 4, 17-40.
- Rychner, V., 1974-75. 'L'Age du Bronze final à Auvernier NE.'. JSGU 58, 43-65.
- Rychner, V., 1976. 'La Suisse préhistorique. La brillante civilisation du Bronze final'. Archéologia 101, 39-45.
- Rymne, E., 1962. 'Late Bronze Age rattle-pendants from Ireland'. PPS 28, 383-385.
- de Saint-Venant, M. J., 1908. 'Antiques sphéroïdes en bronze à ouvertures polaires'. In, Congrès International d'Anthropologie et d'Archéologie Préhistorique. Compte Rendu de la Treizième Session. Monaco 1906. 2. Monaco, 278-293.
- Sandars, N. K., 1957. Bronze Age cultures in France. Cambridge.
- Sandars, N. K., 1971. 'From Bronze Age to Iron Age: a sequel to a sequel'. In, Hawkes Festschrift, 1-29.
- Sandford, W. A., 1880. 'A bronze torque, a bracelet and two celts from West Buckland, Somerset'. Arch. J. 37, 107.
- Sangmeister, E., 1969. 'Die Hallstattgräber im Hagenau Forst und die relative Chronologie der jüngeren Hallstattkultur im Westen'. In, Dehn Festschrift, 154-187.

- Saunders, C., 1971. 'The pre-Belgic Iron Age in the central and western Chilterns'. Arch. J. 128, 1-30.
- Savory, H. N., 1946-47. 'Hoard of Breton socketed axes from Tintern, Monmouthshire'. Arch. Camb. 99, 114-115.
- Savory, H. N., 1948. 'The "Sword-bearers". A reinterpretation'. PPS 14, 155-176.
- Savory, H. N., 1949. 'The Atlantic Bronze Age in south-west Europe'. 128-155.
- Savory, H. N., 1958a. 'The Late Bronze Age in Wales'. Arch. Camb. 107, 3-63.
- Savory, H. N., 1958b. 'The origin of British palstaves with double loops'. Aequologia e História⁸ 8, 67-73.
- Savory, H. N., 1964-66. 'The Guilsfield hoard'. Bulletin of the Board of Celtic Studies 21, 179-197.
- Savory, H. N., 1966-68. 'A double-looped palstave possibly from central Wales'. Bulletin of the Board of Celtic Studies 21, 407-410.
- Savory, H. N., 1968. Spain and Portugal. London.
- Savory, H. N., 1971. Excavations at Dinorben, 1965-9. Cardiff.
- Savory, H. N., 1975. 'Some Welsh Late Bronze Age hoards—old and new'. Arch. Atlant. 1, 111-125.
- Savory, H. N., 1976a. Guide catalogue of the Early Iron Age collections. (National Museum of Wales). Cardiff.
- Savory, H. N., 1976b. 'Welsh hillforts: a reappraisal of recent research'. In, Hillforts, ed. D. W. Harding. London/New York/San Francisco, 237-291.
- Schaaff, U., 1971. 'Ein Keltisches Fürstengrab von Worms-Herrnsheim'. JRGZM 18, 51-117.
- Schaaff, U. and Taylor, A. K., 1971. 'Südimporte im Raum nördlich der Alpen (6.-4. Jahrhundert v. Chr.)'. In, Ausgrabungen in Deutschland 3, 312-316.
- Schaeffer, C. F. A., 1926. Les tertres funéraires préhistoriques dans la forêt de Hagenu. 1. Les tumulus de l'Age du Bronze. Hagenu.
- Schaeffer, C. F. A., 1930. Les tertres ... 2. Les tumulus de l'Age du Fer. Hagenu.
- Schauer, P., 1971. Die Schwerter in Süddeutschland, Österreich und der Schweiz I. PBF IV/2. München.
- Schauer, P., 1972a. 'Zur Herkunft der bronzenen Hallstatt-Schwerter'. Arch. Korr. 2, 261-270.
- Schauer, P., 1972b. 'Ein späturnenfelderzeitliches Griffzungenschwert aus der Umgebung von Speyer'. Arch. Korr. 2, 111-114.

- Schauer, P., 1972c. 'Ein westeuropäisches Bronzeschwert aus dem Main bei Frankfurt-Höchst'. Germania 50, 16-29.
- Schauer, P., 1973. 'Kontinentaleuropäische Bronzelanzenspitzen vom Typ Enfield'. Arch. Korr. 3, 293-298.
- Schauer, P., 1974a. 'Neues zu der Bronzelanzenspitze vom Typ Enfield aus Baden-Württemberg'. Arch. Korr. 4, 27-29.
- Schauer, P., 1974b. 'Zu einigen italienschen Schwerten in westeuropäischen Museen'. In, Beiträge zu italienischen und griechischen Bronzefunden, ed. H. Müller-Karpe. PBF XX/1. München, 27-32.
- Schauer, P., 1974c. 'Der urnenfelderzeitliche Depotfund von Dolina, Gde. und Kr. Nova Gradiška, Kroatien'. JRGZM 21, 93-124.
- Schauer, P., 1975a. 'Beginn und Dauer der Urnenfelderkultur in Südfrankreich'. Germania 53, 47-63.
- Schauer, P., 1975b. 'Die Bewaffnung der "Adelskrieger" während der späten Bronze- und frühen Eisenzeit'. In, Ausgrabungen in Deutschland 3, 305-311.
- Schiek, S., 1954. 'Das Hallstattgrab von Vilsingen'. In, Festschrift für Peter Goessler. Stuttgart, 150-167.
- Schiek, S., 1955-56. 'Ein Grabfund der frühen Urnenfelderkultur aus Bern'. Jahrbuch des Bernischen Historischen Museums in Bern 35-36, 273-276.
- Schindler, R., 1969. 'Die Aleburg bei Befort in Luxemburg'. Hemecht 21, 37-50.
- Schmid, W., 1940. 'Der frühhallstattische Hortfund von Schönberg in Steiermark'. Germania 24, 195-204.
- Schubart, H., 1972. Die Funde der älteren Bronzezeit in Mecklenburg. Offa-Bücher 26. Neumünster.
- Schubart, H., 1975. Die Kultur der Bronzezeit im Südwesten der Iberischen Halbinsel. Madrider Forschungen 9. Berlin.
- Schubert, E., 1973. 'Studien zur frühen Bronzezeit an der mittleren Donau'. 54. BRGK, 1-105.
- Schüle, W., 1960. 'Frühe Antennenwaffen in Südwesteuropa'. Germania 38, 1-19.
- Schüle, W., 1969. Die Meseta-Kulturen der Iberischen Halbinsel. Madrider Forschungen 3. Berlin.
- Schünemann, D., 1975. 'Die ältere und mittlere Bronzezeit im Kreis Verden'. NNU 44, 35-85.
- Schwappach, F., 1969. 'Stempelverzierte Keramik von Armorika'. In, Dehn Festschrift, 213-287.
- Scott, J. G. and Powell, T. G. E., 1969. 'A bronze horse figurine found near Birkwood, Lesmahagow, Lanarkshire'. Ant. J. 49, 118-126.

- Severin, T., 1978. The Brendan voyage. London.
- Shee, E. A. and O'Kelly, M. J., 1971. 'The Derrynablaha "shield" again'. JCHAS 76, 72-76.
- Sheppard, T., 1941. 'The Parc-y-Meirch hoard, St. George parish, Denbighshire'. Arch. Camb. 96, 1-10.
- Shortt, H. de S., 1949-50. 'A hoard of bangles from Ebbesbourne Wake, Wilts.'. WAM 53, 104-112.
- Smirnov, K. F. and Petrenko, V. G., 1963. Savromat' Povolzhya i Yuzhnogo Priuralya. Arkheologiya SSSR, D 1-9. Moskva.
- Smith, A. G., 1958. 'The context of some Late Bronze Age and Early Iron Age remains from Lincolnshire'. PPS 24, 78-84.
- Smith, I. F., 1961. 'An essay towards the reformation of the British Bronze Age'. Helinium 1, 97-118.
- Smith, J. A., 1881-82. 'Notice of a large copper-like or brass anvil, stated to have been found in the south of Scotland: also of a small ancient bronze anvil, found in Sutherland'. PSAS 16, 15-25.
- Smith, M. A., 1959. 'Some Somerset hoards and their place in the Bronze Age of southern Britain'. PPS 25, 144-187.
- Smith, R. A., 1917-18. 'Specimens from the Layton Collection in Brentford Public Library'. Archaeologia 69, 1-30.
- Smith, R. A., 1919-20. '...two bronze bracelets belonging to the Royal Institution of Cornwall...'. PSAL² 32, 97-99.
- Smith, R. A., 1920. A guide to the antiquities of the Bronze Age. (British Museum.) London.
- Smith, R. A., 1925. A guide to antiquities of the Early Iron Age. (British Museum.) London.
- Smith, R. A., 1927. 'Pre-Roman remains at Scarborough'. Archaeologia 77, 179-200.
- Snodgrass, A. M., 1964. Early Greek armour and weapons. Edinburgh.
- Snodgrass, A. M., 1971. 'The first European body-armour'. In, Hawkes Festschrift, 31-50.
- Snodgrass, A. M., 1973. 'Bronze "phalera"—a review'. In, HBA 3/1, 41-50.
- Sotheby, Wilkinson and Hodge, 1890. Catalogue of the well-known and important collection of stone and bronze, formed by the late T. W. U. Robinson, Esq., of Hardwick Hall, Sedgfield. London.
- Spindler, K., 1975. 'Grabfunde der Hallstattzeit vom Magdalenenberg bei Villingen im Schwarzwald'. In, Ausgrabungen in Deutschland 1, 221-242.
- Spindler, K., 1976. Der Magdalenenberg bei Villingen. Führer zu vor- und frühgeschichtlichen Denkmälern in Baden-Württemberg 5. Stuttgart/Aalen.

- Sprater, F., 1939. 'Ein Hortfund der Hallstattzeit vom Forsthaus Schorlenberg bei Alsenborn (Pfalz)'. Germania 23, 158-163.
- Spratling, M. G., 1974. 'The dating of the Iron Age swan's neck sunflower pin from Fengate, Peterborough, Cambridgeshire'. Ant. J. 54, 268-269.
- Spratling, M. G., forthcoming. 'The debris of metalworking'. In, The Iron settlement of Gussage All Saints. Department of the Environment Archaeological Reports. London.
- Sprenger, J., 1948. 'Beknopt overzicht der voor- en vroeghistorische omdaden en hun vindplaatsen in de gemeente Maastricht'. OMROL 29, 15-42.
- Sprockhoff, E., 1927. 'Die ältesten Schwertformen Niedersachsens'. PZ 18, 123-141.
- Sprockhoff, E., 1930a. Zur Handelsgeschichte der Germanischen Bronzezeit. VF 7. Berlin.
- Sprockhoff, E., 1930b. 'Hügelgräber bei Vorwohlde im Kreise Sulingen'. PZ 21, 193-236.
- Sprockhoff, E., 1931. Die Germanischen Griffzungenschwerter. RGF 5. Berlin/Leipzig.
- Sprockhoff, E., 1934. Die Germanischen Vollgriffschwerter der jüngeren Bronzezeit. RGF 9. Berlin/Leipzig.
- Sprockhoff, E., 1937. Jungbronzezeitliche Hortfunde Norddeutschlands (Periode IV). Kataloge des Römisch-Germanischen Zentralmuseums zu Mainz 12. Mainz.
- Sprockhoff, E., 1938. 'Die Spindlersfelder Fibel'. In, Marburger Studien, ed. E. Sprockhoff. Darmstadt, 205-234.
- Sprockhoff, E., 1941. 'Niedersachsens Bedeutung für die Bronzezeit Westeuropas'. 31. BRGK, 1-138.
- Sprockhoff, E., 1951. 'Pfahlbaubronzen in der Südzone des Nordischen Kreises während der jüngeren Bronzezeit'. Archaeologia Geographica 2, 120-128.
- Sprockhoff, E., 1953. 'Armringe mit kreisförmiger Erweiterung'. In, Beiträge zur älteren Europäischen Kultur-Geschichte. Festschrift für Rudolf Egger, ed. G. Moro, II. Klagfurt, 11-28.
- Sprockhoff, E., 1954. 'Nordische Bronzezeit und Frühes Griechentum'. JRGZM 1, 28-110.
- Sprockhoff, E., 1955. 'Das bronzene Zierband von Kronshagen bei Kiel'. Offa 14.
- Sprockhoff, E., 1956. Jungbronzezeitliche Hortfunde der Südzone des Nordischen Kreises (Periode V). Römisch-Germanisches Zentralmuseum zu Mainz. Katalog 16. Mainz.
- Sprockhoff, E., 1959. 'Pestruper Bronzen'. In, Gandert-Festschrift, ed. A. von Müller and W. Nagel. Berliner Beiträge zur Vor- und Frühgeschichte 2. Berlin, 152-167.

- Sprockhoff, E., 1966. 'Ein Geschenk aus dem Norden'. In, Vogt Festschrift, 101-110.
- Stampfuss, R., 1939. Das Hügelgräberfeld Rheinberg. Quellenschriften zur westdeutschen Vor- und Frühgeschichte 2. Leipzig.
- Stead, I. M., 1965. The La Tène cultures of eastern Yorkshire. York.
- Stead, I. M., 1968. 'An Iron Age hill-fort at Grimthorpe, Yorkshire, England'. PPS 34, 148-190.
- Steiner, P., 1930. 'Jahresbericht des Provinzialmuseums zu Trier. IV Erwerbungen. A, Vorrömisches'. Trierer Zeitschrift 5, 163-165.
- Stephan, E., 1956. Die ältere Bronzezeit in der Altmark. Veröffentlichungen des Landesmuseums für Vorgeschichte in Halle 15. Halle.
- Stevens, S., 1976. 'Major discovery of Bronze Age implements at Dover'. Kent Archaeological Review 43, 67-73.
- Stjernquist, B., 1961. Simris II. Acta Archaeologica Lundensia, Series in 4^o, 5. Lund.
- Stjernquist, B., 1967. Ciste a cordoni (Rippenzisten): Produktion-Funktion-Diffusion. Acta Archaeologica Lundensia, Series in 4^o, 6, Lund/Bonn.
- Stjernquist, B., 1973. Review of Randsborg 1968 and 1972. Fornvännen 68, 112-116.
- Stone, J. F. S., 1935-37. 'A Late Bronze Age habitation site on Thorny Down, Winterbourne Gunner, S. Wilts.'. WAM 47, 640-660.
- Struve, K. W., 1971. Die Bronzezeit, Periode I-III. Geschichte Schleswig-Holsteins, Zweiter Band, Erste Lieferung, ed. O. Klose. Neumünster.
- Stubbings, F. H., 1970. 'Chronology. III The Aegean Bronze Age'. In, Cambridge Ancient History³ I/1. Cambridge, 239-247.
- Sudholz, G., 1964. Die ältere Bronzezeit zwischen Niederrhein und Mittelweser. Münstersche Beiträge zur Vorgeschichtsforschung 1. Hildesheim.
- Sulimirski, T., 1961. 'Die Skythen in Mittel- und Westeuropa'. In, Bericht über den V. internationalen Kongress für Vor- und Frühgeschichte, Hamburg 1958, ed. G. Bersu. Berlin, 793-799.
- Sumner, H., 1927. 'Bronze hoard in the New Forest'. Ant. J. 7, 192-193.
- Sundwall, J., 1943. Die älteren italischen Fibeln. Berlin.
- Sylvest, B., 1957. 'En svaerdske de fra aeldre Bronzealder'. Kuml, 44-48.
- Tackenberg, K., 1939. 'Die zweihenkligen Terrinen der jüngeren Bronzezeit und älteren Eisenzeit'. In, Urgeschichtstudien beiderseits der Niederelbe, K. H. Jacob-Friesen gewidmet, ed. G. Schwantes. Darstellungen aus Niedersachsens Urgeschichte 4. Hildesheim, 153-157.
- Tackenberg, K., 1961-63. 'Die nordischen Rasiermesser der jüngeren Bronzezeit in Nordwestdeutschland'. Archaeologia Geographica 10-11, 7-18.
- Tackenberg, K., 1971. Die jüngere Bronzezeit in Nordwestdeutschland. Teil I. Die Bronzen. VUSLH 19. Hildesheim.

- Tackenberg, K., 1974. Die ... Teil II. Die Felsgesteingeräte. VUSLH 19F. Hildesheim.
- Tackenburg, K., 1975. 'Ein Ledermesser von Beckdorf, Kr. Stade'. Arch. Korr. 5, 195-196.
- Tackenberg, K., 1976. 'Ergänzungen zu den Abhandlungen von K. H. Brandt und K. Tackenberg über die nackengebogenen Axte Nordwestdeutschlands' NNU 45, 31-44.
- Talbot de Malahide, the Lord, 1852. 'A remarkable bronze palstave found in Ireland'. Arch. J. 9, 194-195.
- Tallgren, A. M., 1937. 'The Arctic bronze Age in Europe'. Eurasia Septentrionalis Antiqua 11, 1-46.
- Taylor, J. J., 1968. 'Early Bronze Age gold neck-rings in western Europe'. PPS 34, 259-265.
- Thenot, A., 1976. 'Les civilisations de l'Age du Fer en Champagne'. In, Guilaine 1976a, 826-836.
- Thomas, C., 1964. 'An unrecorded "Ornament Horizon" hoard from the Helston area'. The Lizard 2/4, 4-6.
- Thomas, N., 1966-67. 'A Late Bronze Age socketed chisel from Barford'. Transactions of the Birmingham and Warwickshire Archaeological Society 83, 38-41.
- Thomas, N., 1974. 'An archaeological gazetteer for Warwickshire: Neolithic to Iron Age'. Transactions of the Birmingham and Warwickshire Archaeological Society 86, 16-48.
- Thrane, H., 1958. 'The rattle pendants from the Parc-y-Meirch hoard'. PPS 24, 221-227.
- Thrane, H., 1960. 'Drei Dänische hortfunde der jüngeren Bronzezeit mit einheimischen und fremden formen'. Acta Arch. 31, 1-62.
- Thrane, H., 1962a. 'The earliest bronze vessels in Denmark's Bronze Age'. Acta Arch. 33, 109-163.
- Thrane, H., 1962b. 'Hjulgraven fra Storehøj ved Tobøl i Ribe Amt'. Kuml, 80-112.
- Thrane, H., 1963. 'De første broncebidsler i mellem- og nordeuropa'. Aarbøger, 50-99.
- Thrane, H., 1965. 'Dänische Funde fremder Bronzegefäße der jüngeren Bronzezeit (Periode IV)'. ActaArch. 36, 157-207.
- Thrane, H., 1968. 'Eingeführte Bronzeschwerter aus Dänemarks jüngere Bronzezeit'. Acta Arch. 39, 143-218.
- Thrane, H., 1972a. 'Et nyt depotfund fra Sønderjylland og danske fund af skaftlap-økser fra yngre broncealder'. Aarbøger, 71-134.
- Thrane, H., 1972b. 'Urnenfeldermesser aus Dänemarks jüngerer Bronzezeit'. Acta Arch. 43, 165-228.

- Thrane, H., 1975. Europaeiske forbindelser. Nationalmuseets Skrifter, Arkaeologisk-historisk raekke, 16. København.
- Todd, M., 1972. The everyday life of the barbarians; Goths, Franks and Vandals. London/New York.
- Todd, M., 1975. The northern barbarians. London.
- Torbrügge, W., 1959a. 'Die Bronzezeit in Bayern'. 40. BRGK, 1-78.
- Torbrügge, W., 1959b. Die Bronzezeit in der Oberpfalz. MBV 13. Kallmünz.
- Torbrügge, W., 1965. 'Vollgriffschwerter der Urnenfelderzeit'. Bayerische Vorgeschichtsblätter 30, 71-105.
- Torbrügge, W., 1970-71. 'Vor- und Frühgeschichtliche Flussfunde'. 51.-52. BRGK, 1-146.
- Toulouze, E., 1891. 'Etude sur la bataille navale de Morsang-Saintry'. Rev. Arch. ³ 18/2, 163-186.
- Tratman, E. K., 1922-25. 'Second report on King's Weston Hill, Bristol'. PUBSS 2, 238-243.
- Trump, B. A. V., 1962. 'The origin and development of British Middle Bronze Age rapiers'. PPS 28, 80-102.
- Trump, B. A. V., 1968. 'Fenland rapiers'. In, Studies in ancient Europe. Essays presented to Stuart Piggott, ed. J. M. Coles and D. D. A. Simpson, Leicester, 213-225.
- Tylecote, R. F., 1962. Metallurgy in archaeology. London.
- Tylecote, R. F., 1967. 'Metallurgical examination of a socketed axe and three lumps of bronze from Gillan, St. Anthony-in-Meneage'. Cornish Archaeology 6, 110-111.
- Tylecote, R. F., 1976. A history of metallurgy. London.
- Uenze, O., 1960. Hirten und Salzeder (Bronzezeit). Vorgeschichte von Nordhessen 3. Marburg-Lahn.
- Undset, I., 1882. Das erste Auftreten des Eisens in Nord-Europa. Hamburg.
- Unz, C., 1973. 'Die spätbronzezeitliche Keramik in Südwestdeutschland, in der Schweiz und in Ostfrankreich'. PZ 48, 1-124.
- von Uslar, R., 1939. 'Zwei neue Gräber der alteren Urnenfelderkultur aus dem Rheinland'. Germania 23, 13-18.
- Varley, W. J., 1964. Cheshire before the Romans. Chester.
- Varley, W. J., 1968. 'Barmston and the Holderness crannogs'. East Riding Archaeologist 1/1, 11-26.
- Vermeersch, D. and E., 1975. 'Les recherches archéologiques sur le site Gallo-Romain et hallstattien de Famechon (Somme)'. RAO 6, 40-43.
- Verron, G., 1971. Musée Départementale des Antiquités de la Seine-Maritime. Antiquités Préhistoriques et Protohistoriques. Rouen.

- Verron, G., 1973. 'Informations archéologiques. Circonscription de Haute et Basse Normandie'. Gallia Préhist. 16, 361-399.
- Verron, G., 1975a. 'Le dépôt de haches à talon de La Chapelle-du-Bois-des-Faulx (Eure)'. Nouvelles de l'Eure 56, 56-69.
- Verron, G., 1975b. 'Information archéologiques. Circonscription de Haute et Basse Normandie'. Gallia Préhist. 18, 471-510.
- Veron, G., 1976a. 'Les civilisations de l'Age du Bronze en Normandie'. In, Guilaine 1976a, 585-600.
- Verron, G., 1976b. 'Les civilisations de l'Age du Fer en Normandie'. In, Guilaine 1976a, 802-815.
- Verwers, G. J., 1966a. 'A Late Bronze Age/Early Iron Age urnfield at Goirle, Prov. Noord-Brabant'. APL 2, 33-48.
- Verwers, G. J., 1966b. 'Non-circular monuments in the southern Dutch urnfields'. APL 2, 49-57.
- Verwers, G. J., 1966c. 'Tumuli at the Zevenbergen near Oss, gem. Berghem, Prov. Noord-Brabant'. APL 2, 27-32.
- Verwers, G. J., 1969. 'The beginning of the Late Bronze Age in the lower Rhine area'. BROB 19, 17-25.
- Verwers, G. J., 1972. Das Kamps Veld in Haps in Neolithikum, Bronzezeit und Eisenzeit. Leiden. = APL 5.
- Verwers, G. J., 1974. 'Kalenderberg'. Westerheem 23, 15-19.
- Verwers, G. J., 1975. 'Urnenveld en nederzetting te Laag Spul, gem. Hilvarenbeek'. APL 8, 23-43.
- Vinski, Z., 1955. 'Der "Thrako-Kimmerische" Fund von Adaševci in Syrmien'. RVM 4, 27-42.
- Vizdal, J., 1972. 'Erste bildliche Darstellung eines zweirädrigen Wagens vom Ende der mittleren Bronzezeit in der Slowakei'. Slovenská Archeológia 20/1, 223-231.
- Vladár, J., 1973. 'Osteuropäische und Mediterrane Einflüsse im Gebiet der Slowakei während der Bronzezeit'. Slovenská Archeológia 21/2, 253-357.
- Vlček, E. and Hájek, L., 1963. 'A ritual well and the find of an Early Bronze Age iron dagger at Gánovce near Poprad (Czechoslovakia)'. In, A Pedro Bosch-Gimpera, ed. S. Genovés. México, 427-439.
- Vogel, J. C. and Waterbolk, H. T., 1963. 'Groningen radiocarbon dates IV'. Radiocarbon 5, 163-202.
- Vogel, J. C. and Waterbolk, H. T., 1964. 'Groningen radiocarbon dates V'. Radiocarbon 6, 349-369.
- Vogt, E., 1942. 'Der Zierstil der späten Pfahlbaubronzen'. Zeitschrift für Schweizerische Archaeologie und Kunstgeschichte 4, 193-206.
- Vuailat, D., 1969. 'Les épées d'Auvergnier et de Tachlovice, leur répartition en France. Etat de la question en 1968'. BSPF 66, 283-292.

- Vuaillet, D., 1977. La nécropole tumulaire de Chavéria (Jura). Annales Littéraires de l'Université de Besançon 189. Paris.
- Vulpe, R., 1970. Die Axte und Beile in Rumänien I. PBF IX/2. München.
- Vulpe, R., 1975. Die Axte und Beile in Rumänien II. PBF IX/5. München.
- van der Waals, J. D., 1962. 'A bronze sword of Erbenheim type from Ter Apel (GR.)'. Helinium 2, 118-120.
- van der Waals, J. D., 1964. Prehistoric disc wheels in the Netherlands. Groningen.
- van der Waals, J. D. and Butler, J. J., 1976. 'Bargeroosterveld'. In, Reallexikon der Germanischen Altertumskunde² 2, 54-58.
- Waddington, Q., 1933. 'Vestiges of pre-Roman London'. Journal of the British Archaeological Association² 39, 382-401.
- Wainwright, G. J., 1967. Coygan Camp. Cardiff.
- Wainwright, G. J. and Longworth, I. H., 1967-70. 'The excavation of a group of round barrows on Ampleforth Moor, Yorkshire'. YAJ 42, 283-294.
- Wainwright, G. J. and Spratling, M. G., 1973. 'The Iron Age settlement of Gussage All Saints'. Antiquity 47, 109-130.
- Waller, J. G., 1873. 'Remarks on some bronze objects found at Haynes Hill, Kent'. Arch. J. 30, 279-283.
- Wamser, G., 1975. 'Zur Hallstattkultur in Ostfrankreich'. BRGK 56, 1-178.
- Ward-Perkins, J. B., 1940. 'The pottery of Gergovia in relation to that of other sites in central and south-western France'. Arch. J. 97, 37-87.
- Ware, S., 1846. 'Battle-axe-heads, found near Clare, Suffolk'. Archaeologia 31, 496-497.
- Warre, F., 1849-50. 'Ancient earthwork at Norton Fitzwarren'. Proceedings of the Somersetshire Archaeological and Natural History Society 1/2, 38-47.
- Waterbolk, H. T., 1961a. 'Bronzezeitliche dreischiffige Hallenhäuser von Elp (Drenthe)'. Helinium 1, 126-132.
- Waterbolk, H. T., 1961b. 'Aardewerk uit de Hallstatt D-periode van Zeijen (Drenthe)'. Helinium 1, 137-141.
- Waterbolk, H. T., 1962. 'Hauptzüge der eisenzeitlichen Besiedlung der nordlichen Niederlande'. Offa 19, 9-46.
- Waterbolk, H. T., 1964. 'The Bronze Age settlement of Elp'. Helinium 4, 97-131.
- Waterbolk, H. T., 1965. 'Ein eisenzeitliches Graberfeld bei Ruinen, Provinz Drenthe, Niederlande'. In, Studien aus Alteuropa II. Kurt Tackenberg zum 65. Geburtstag, ed. R. von Uslar. Beihefte der BJ 10/II. Köln/Graz, 34-53.
- Waterbolk, H. T., 1975. 'Evidence of cattle stalling in excavated pre- and protohistoric houses'. In, Archaeozoological Studies, ed. A. T. Clason. Amsterdam/Oxford/New York, 383-394.

- Waterbolk, H. T. and van Zeist, W., 1961. 'A Bronze Age sanctuary in the raised bog at Bargerooosterveld (Dr.)'. Helinium 1, 5-19.
- Waterman, D. M., 1944-47. 'An Italian brooch from Bitterne'. PHFC 16, 189-190.
- Waterman, D. M., Kent, B. W. J. and Stickland, H. J., 1952-55. 'Two inland sites with Iron Age pottery in the West Riding of Yorkshire'. YAJ 38, 383-397.
- Watkins, T., 1976. 'Wessex without Cyprus: "Cypriot daggers" in Europe'. In, Piggott Festschrift, 135-143.
- Way, A., 1849. 'Ancient armillae of gold recently found in Buckinghamshire and in north Britain: with notices of ornaments of gold discovered in the British islands'. Arch. J. 6, 48-61.
- van der Weerd, H., 1938. 'Bijlen uit het bronstijdperk'. L'Ant. Class. 7, 346-347.
- Wheeler, R. E. M., 1924. 'Rare socketed celts'. Ant. J. 4, 151.
- Wheeler, R. E. M., 1925. Prehistoric and Roman Wales. Oxford.
- Wheeler, R. E. M., 1929. ' "Old England", Brentford'. Antiquity 3, 20-32.
- Wheeler, R. E. M., 1931. 'Prehistoric Scarborough'. In, The History of Scarborough, ed. A. Rowntree. London/Toronto, 9-39.
- Wheeler, R. E. M. and Richardson, K. M., 1957. Hill-forts of northern France. Reports of the Research Committee of the Society of Antiquaries of London 19. Oxford.
- Wickham, H., 1877. 'Celtic remains found in the hundred of Hoo'. Archaeologia Cantiana 11, 123-125.
- van Wijngaarden-Bakker, L. H., 1975. 'Horses in the Dutch Neolithic'. In, Archaeozoological Studies, ed. A. T. Clason. Amsterdam/Oxford/New York, 341-344. = IPP Publicatie 174.
- Wilhelmi, K., 1974. 'Zur Verbreitung und Ausrichtung schüssellochformiger Grabanlagen der jüngeren Bronzezeit nordwestdeutschlands'. Arch. Korr. 4, 339-347.
- Willemsen, F., 1957. Dreifusskessel von Olympia. Olympische Forschungen 3. Berlin.
- Willett, F., 1954. 'Three tanged bronze sickles in the Manchester Museum'. Man 54, 106-108.
- Williams, A., 1937. 'Bronze implements from Swansea, Glamorgan'. Arch. Camb. 92, 333-334.
- Wilson, A. E., n.d. A guide to the Bronze Age collection.² Worthing Museum Publications 2. Worthing.
- de Wit, C., 1964. 'De prehistorie van onze kuststreek'. Westerheem 13, 2-7.
- Woche, H., 1965. 'Ein spätbronzezeitlicher Grabfund von Kressbronn, Kr. Tettang'. Germania 43, 16-32.

- Wolseley, G. R. and Smith, R. A., 1924. 'Discoveries near Cissbury'. Ant. J. 4, 347-359.
- Wolseley, G. R., Smith, R. A. and Hawley, W., 1926-27. 'Prehistoric and Roman settlements on Park Brow'. Archaeologia 76, 1-40.
- Woltering, P. J., 1973. 'Wonen rond de Hoge Berg; prehistorie en vroegste geschiedenis van Texel'. Texel 6/2, 2-20. = ROB Overdruk 53.
- Worsaae, J. J. A., 1866. 'Om nogle mosefund fra broncealderen'. Aarbøger, 313-326.
- Worsfold, F. H., 1943. 'A report on the Late Bronze Age site excavated at Minnis Bay, Birchington, Kent, 1938-40'. PPS 9, 28-47.
- Wright, E. V. and C. W., 1947. 'Prehistoric boats from North Ferriby, East Yorkshire'. PPS 13, 114-138.
- Wright, E. V., 1972. 'The boats of North Ferriby'. In, Three major ancient finds in Britain. National Maritime Museum. Maritime monographs and Reports 6. London, 3-7.
- Wright, E. V. and Churchill, D. M., 1965. 'The boats from North Ferriby, Yorkshire, England, with a review of the origins of the sewn boats of the Bronze Age'. PPS 31, 1-24.
- Wyss, R., 1971. 'Technik, Wirtschaft und Handel'. In, UFAS, 123-144.
- Ypey, J., 1956. 'Een bronzen zwaard uit de omgeving van Putten'. Westerheem 5, 103-107.
- Ypey, J., 1960-61. 'Een gordeldoos uit Drouwen'. BROB 10-11, 561-562.
- Ypey, J., 1962-63. 'Merkwaardige vondsten uit Opheusden, Gelderland'. BROB 12-13, 187-192.
- Ypey, J., 1967. 'Archeologia uit de collectie Mr J. W. Frederiks in bruikleen aan het Museum Boymans-van Beuningen'. Bulletin Museum Boymans-van Beuningen 18/3, 98-143. = ROB Overdruk 7.
- Ziegert, H., 1963. Zur Chronologie und Gruppengliederung der westlichen Hügelgräberbronzezeit. Berliner Beiträge zur Vor- und Frühgeschichte 7. Berlin.
- Zimmermann, K., 1969-70. 'Spulennadeln aus der Bronzezeit im Bernischen Historischen Museum'. Jahrbuch des Bernischen Historischen Museums 49-50, 231-250.
- Zippelius, A., 1953. 'Das vormittelalterliche dreischiffige Hallenhaus in Mitteleuropa'. BJ 153, 13-45.
- Zumstein, H., 1966. L'Age du Bronze dans le Département du Haut-Rhin. Bonn. = RAECE 15, 1964, 7-66 and 161-213; 16, 1965, 7-56.
- Zumstein, H., 1976. 'Les civilisations de l'Age du Bronze dans l'Est de la France. A - Les civilisations de l'Age du Bronze en Alsace'. In, Guilaine 1976a, 630-639.
- Zürn, H., 1942. 'Zur Chronologie der späten Hallstattzeit'. Germania 26, 116-124.

Zürn, H. , 1952. 'Zum Übergang von Späthallstatt zu Latène A im südwest-deutschen Raum'. Germania 30, 38-45.

Zürn, H. , 1970. Hallstattforschungen in Nordwürttemberg. Veröffentlichungen des Staatlichen Amtes für Denkmalpflege Stuttgart, Reihe A, 16. Stuttgart.

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Fig 1



Fig. 1. Burnham hoard.

Fig 2A

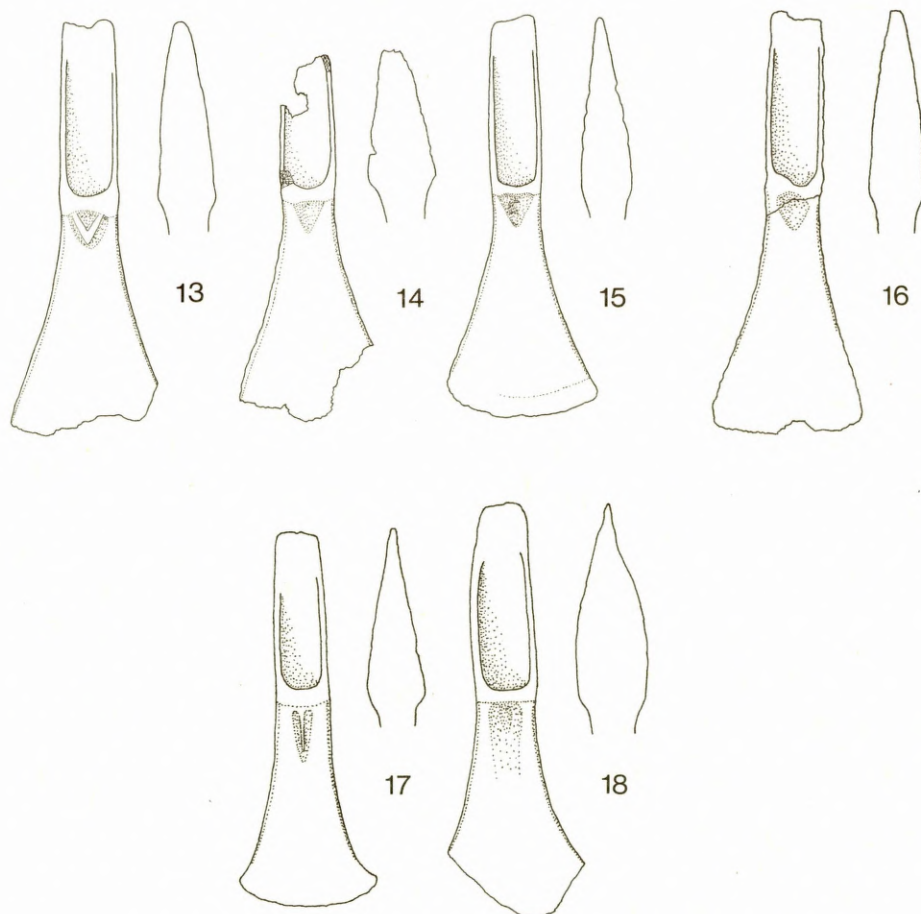


Fig 2B

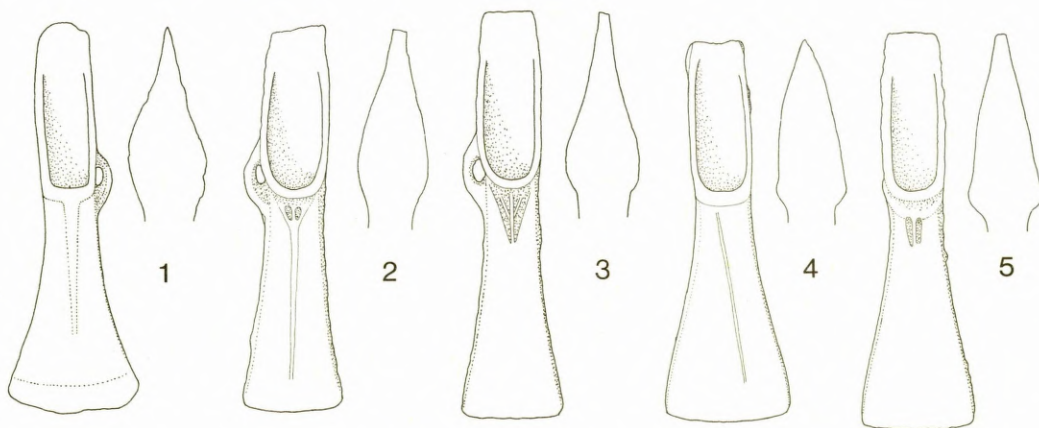


Fig. 2A. Burnham hoard.

Fig. 2B. Dewlish hoard.

Fig 3A

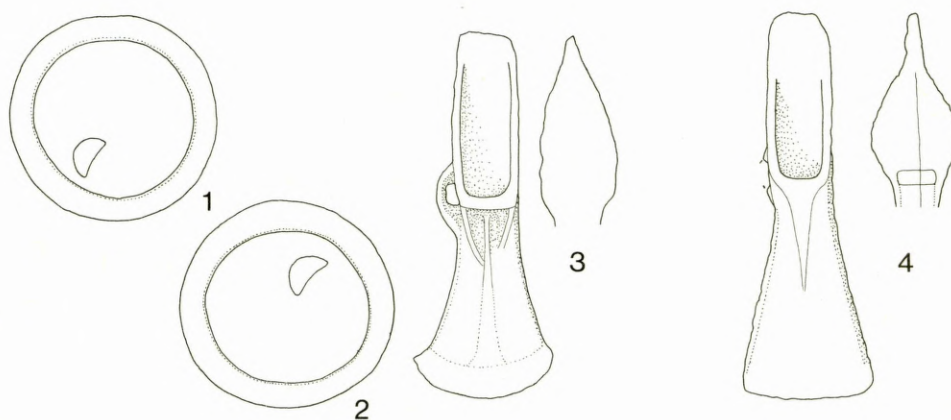


Fig 3B

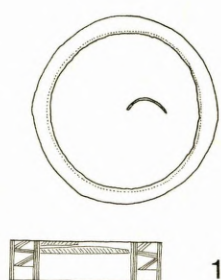


Fig 3C

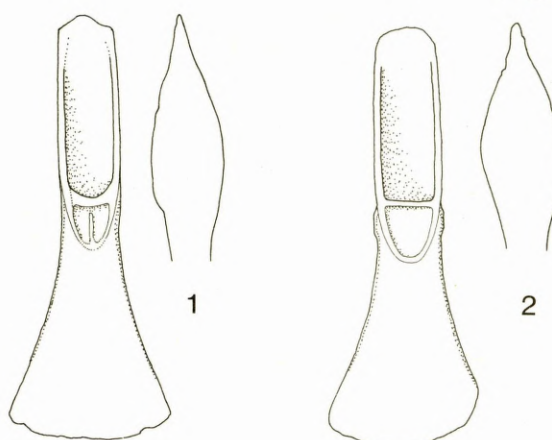


Fig 3D

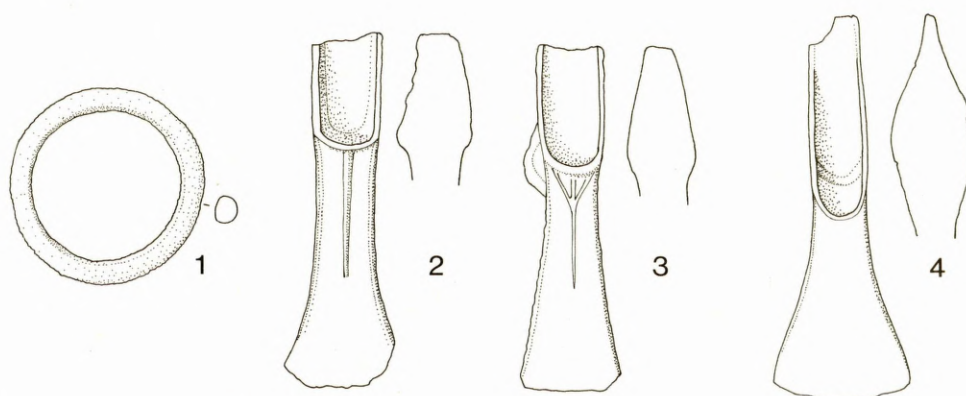


Fig. 3A. Eglesham Meadow hoard.

Fig. 3B. Grimstone hoard.

Fig. 3C. Burley hoard.

Fig. 3D. Gosport hoard.

Fig 4

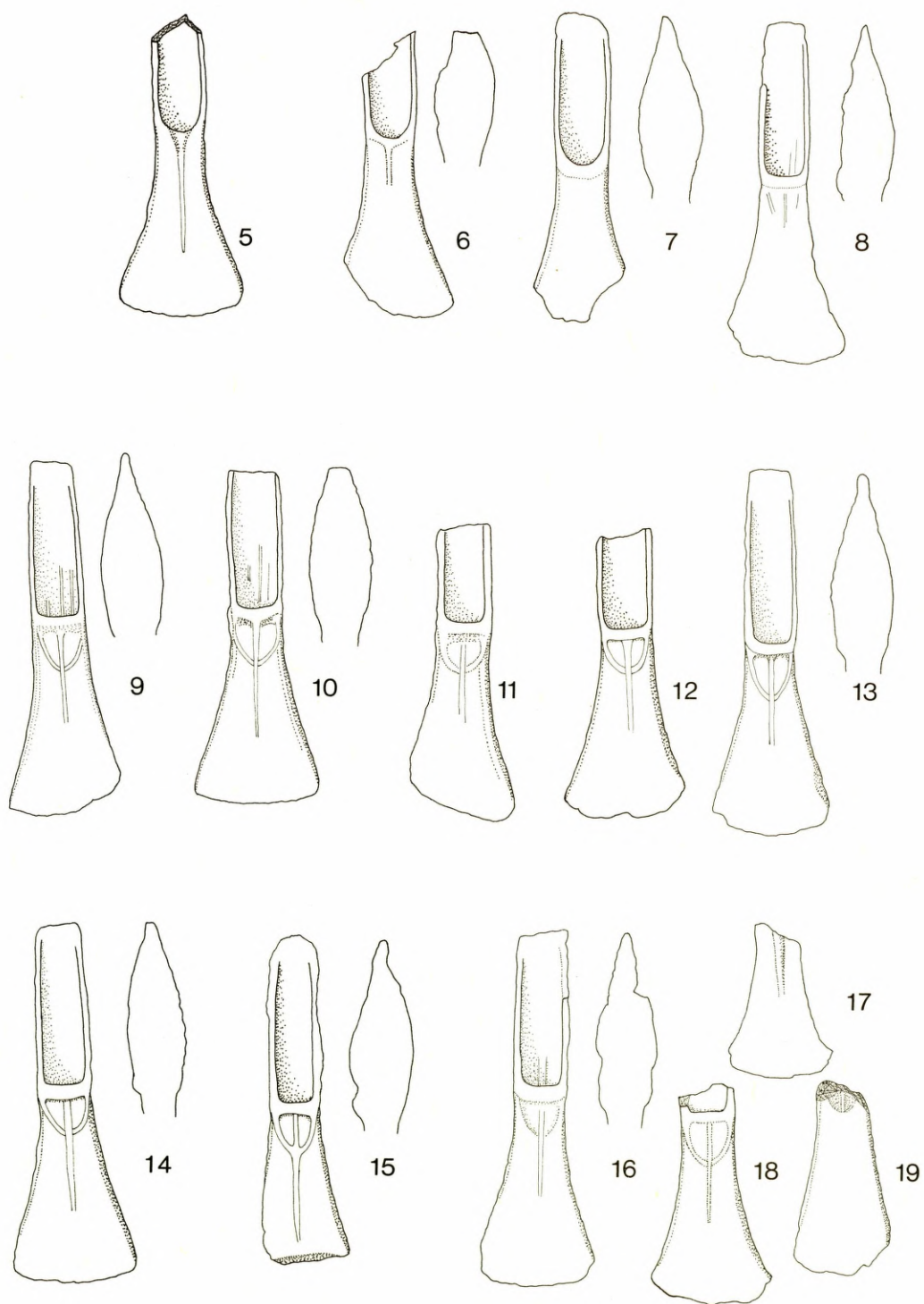


Fig. 4. Gosport hoard.

Fig 5

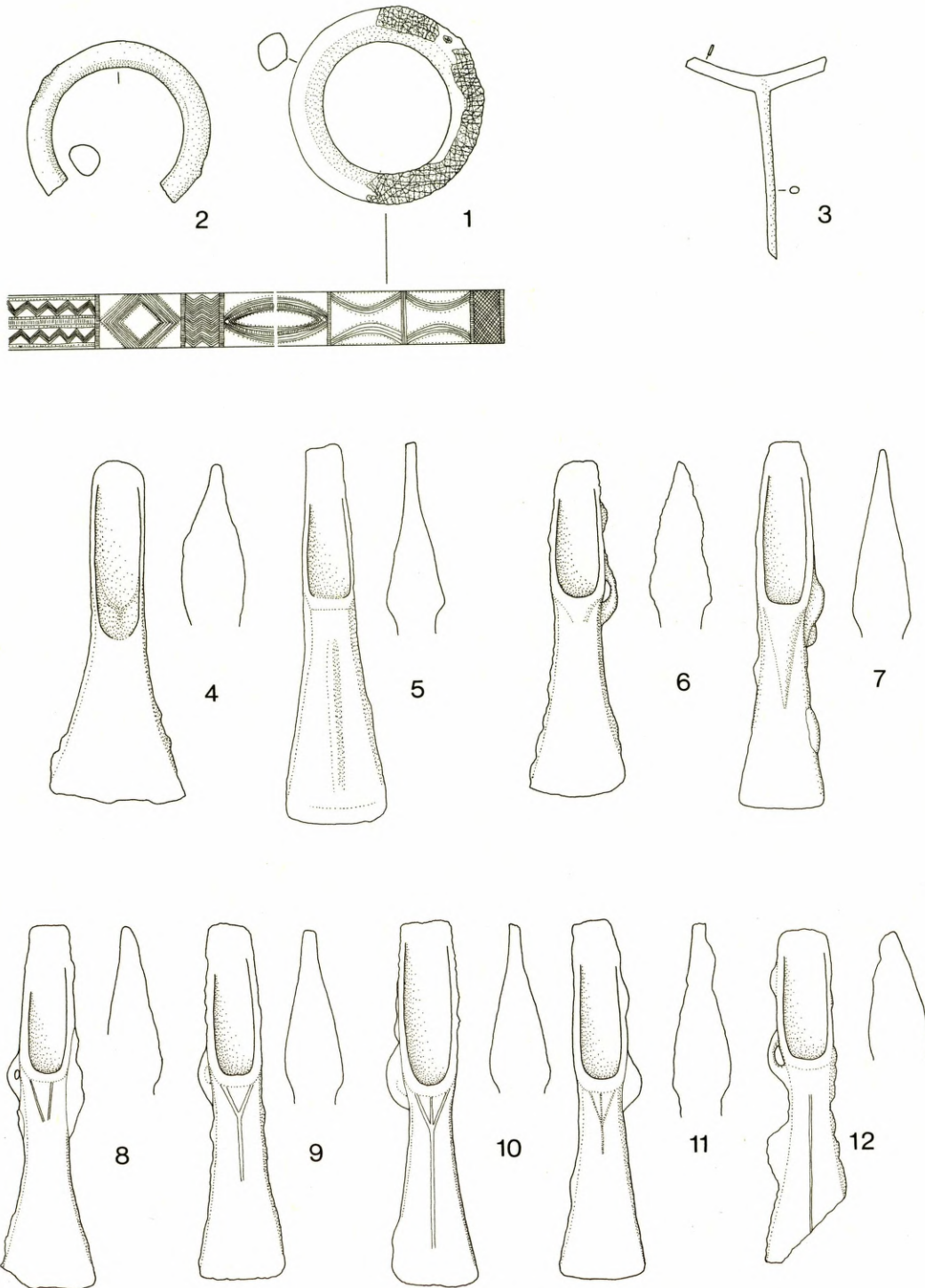


Fig. 5. Gable Head hoard.

Fig 6

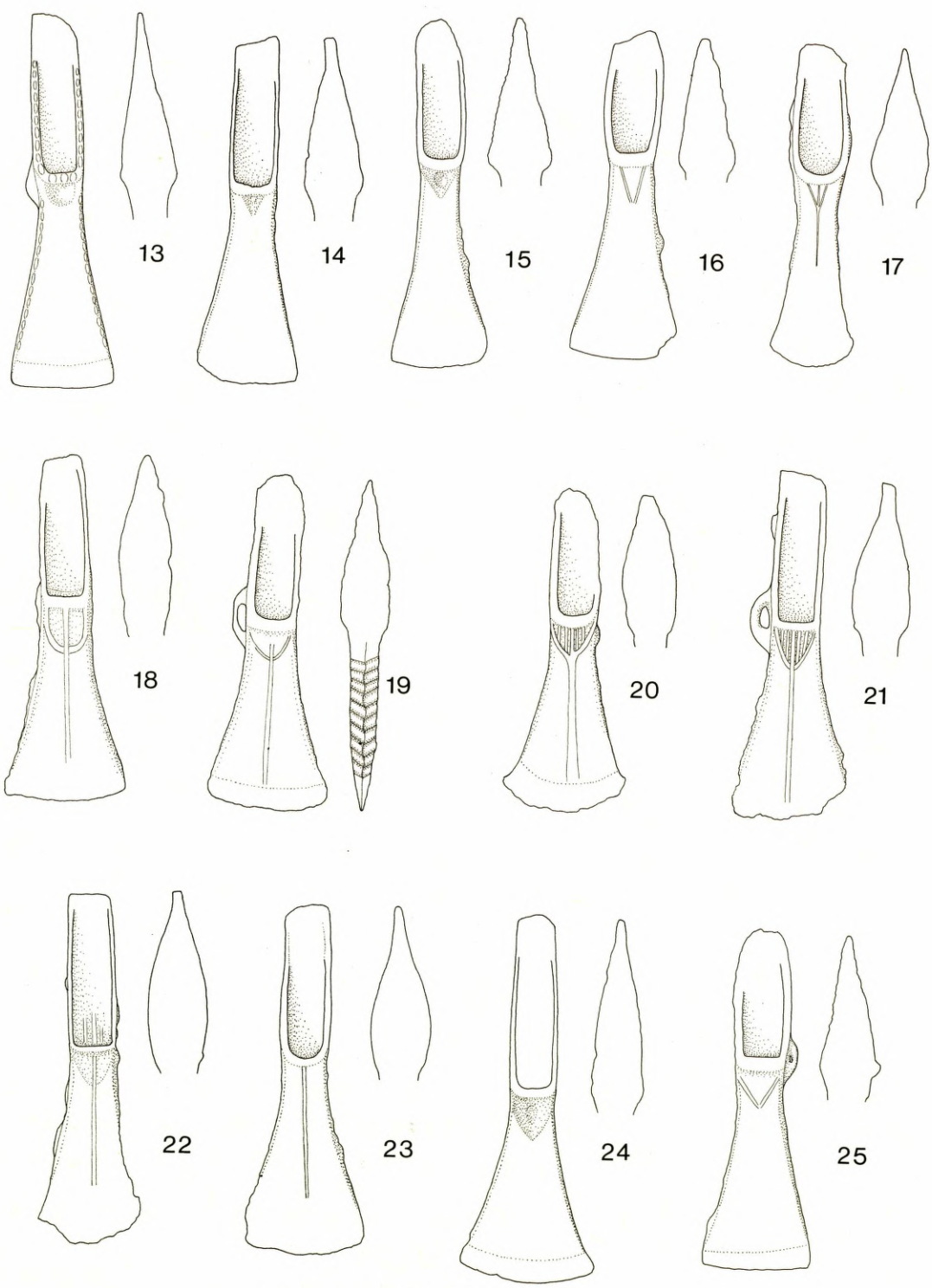


Fig. 6. Gable Head hoard.

Fig 7A

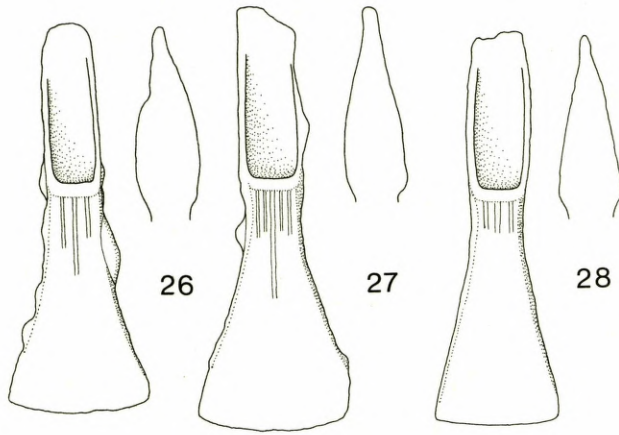


Fig 7B

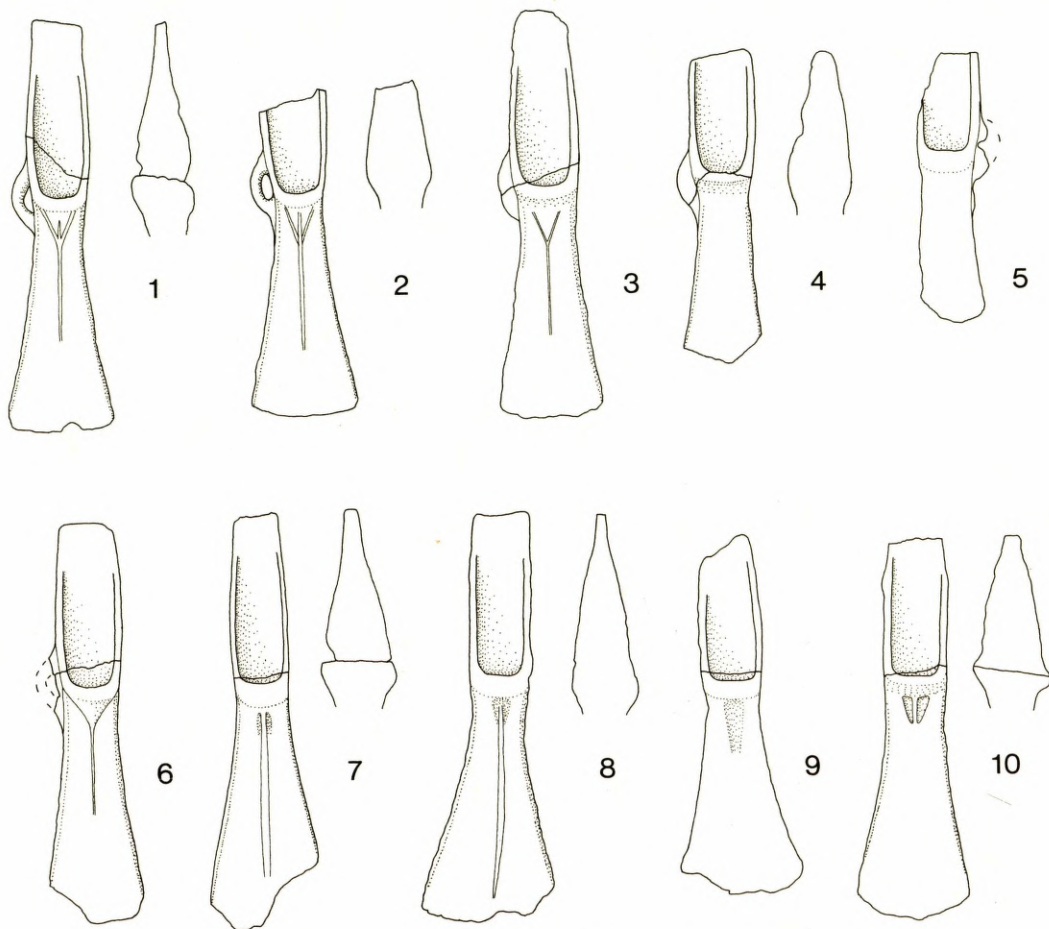


Fig. 7A. Gable Head hoard.

Fig. 7B. Pear Tree Green hoard.

Fig 8A

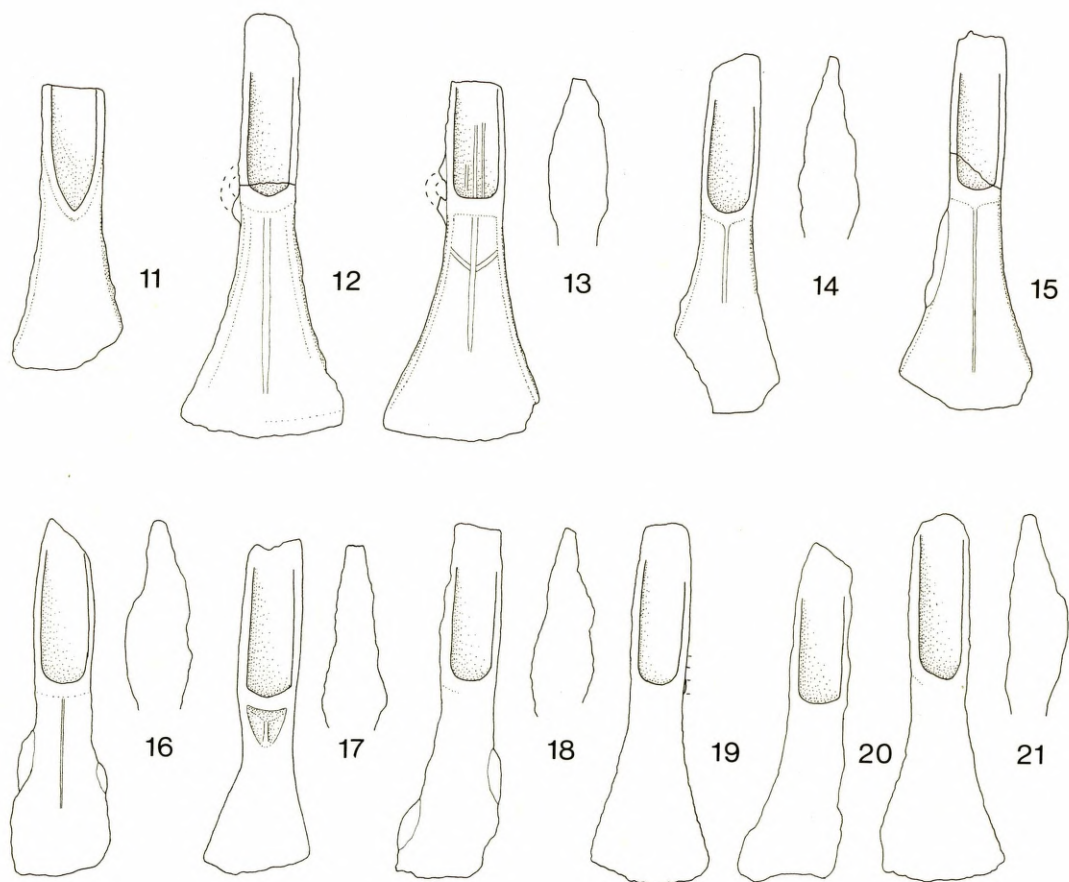


Fig 8B

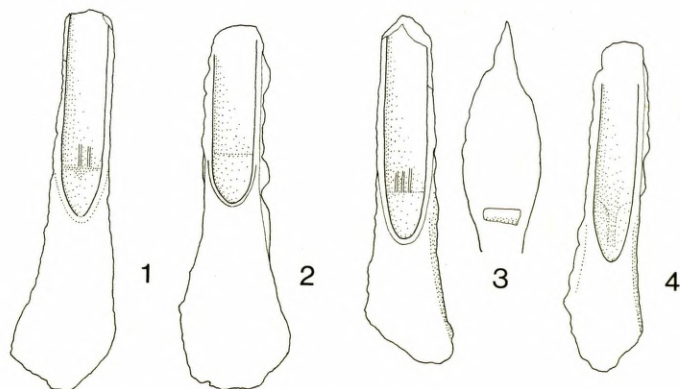


Fig. 8A. Pear Tree Green hoard.
Fig. 8B. Haylands hoard.

Fig 9A

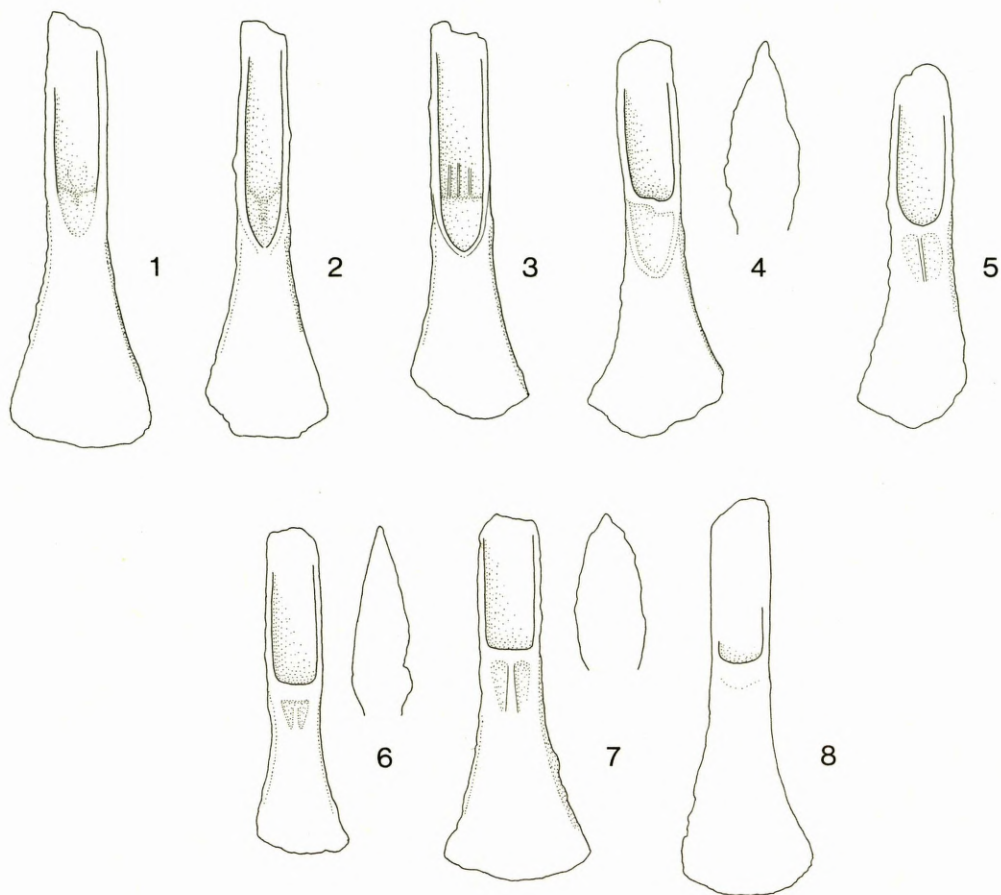


Fig 9B

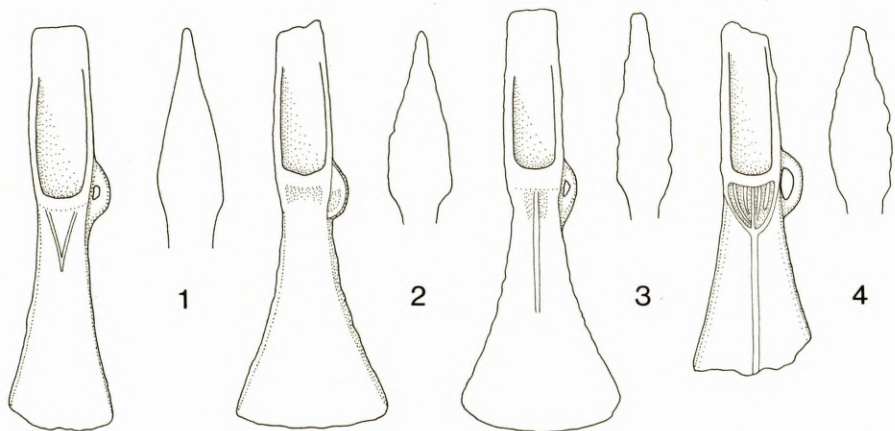


Fig. 9A. Newport/Fairleigh hoard.
Fig. 9B. Leavington hoard.

Fig 10A

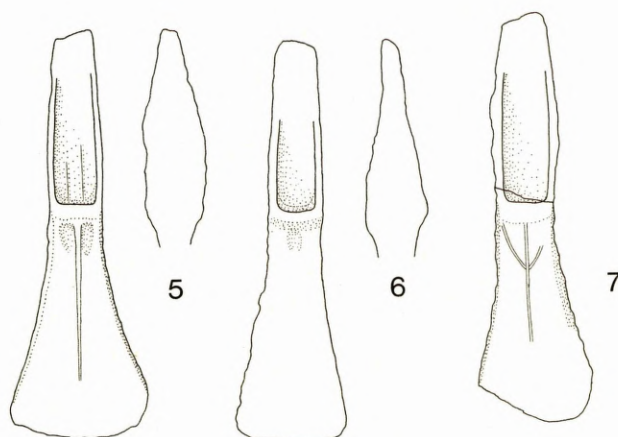


Fig 10B

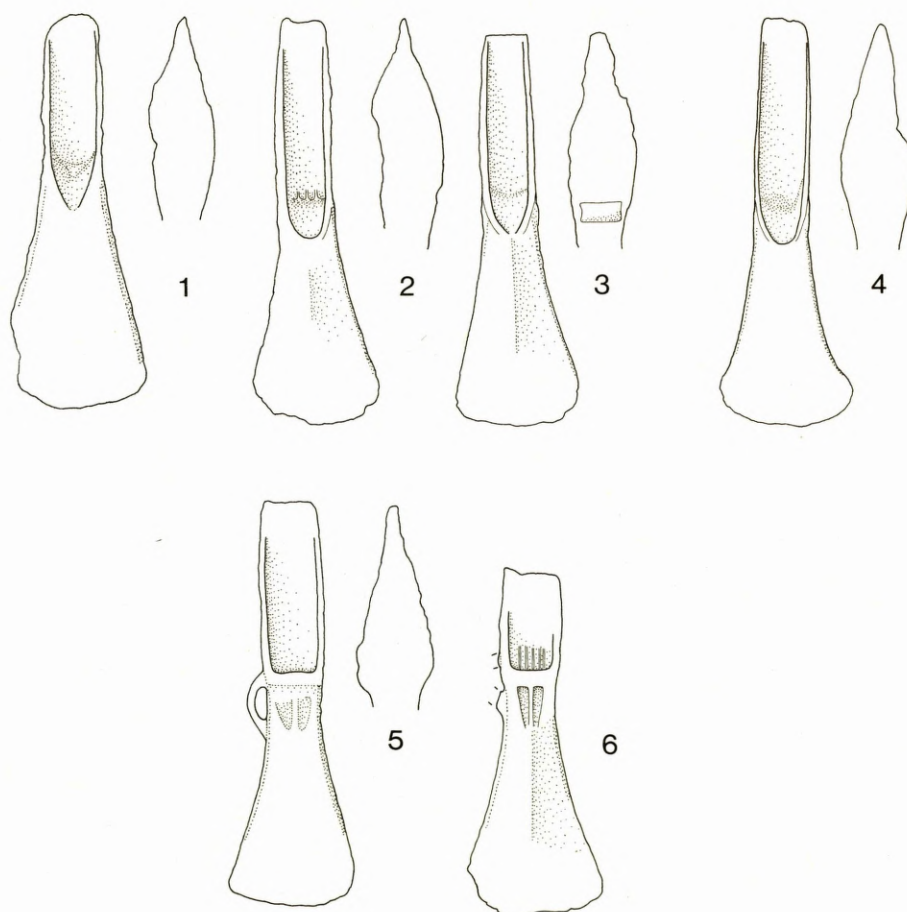


Fig. 10A. Leavington hoard.
Fig. 10B. Werrar hoard.

Fig 11

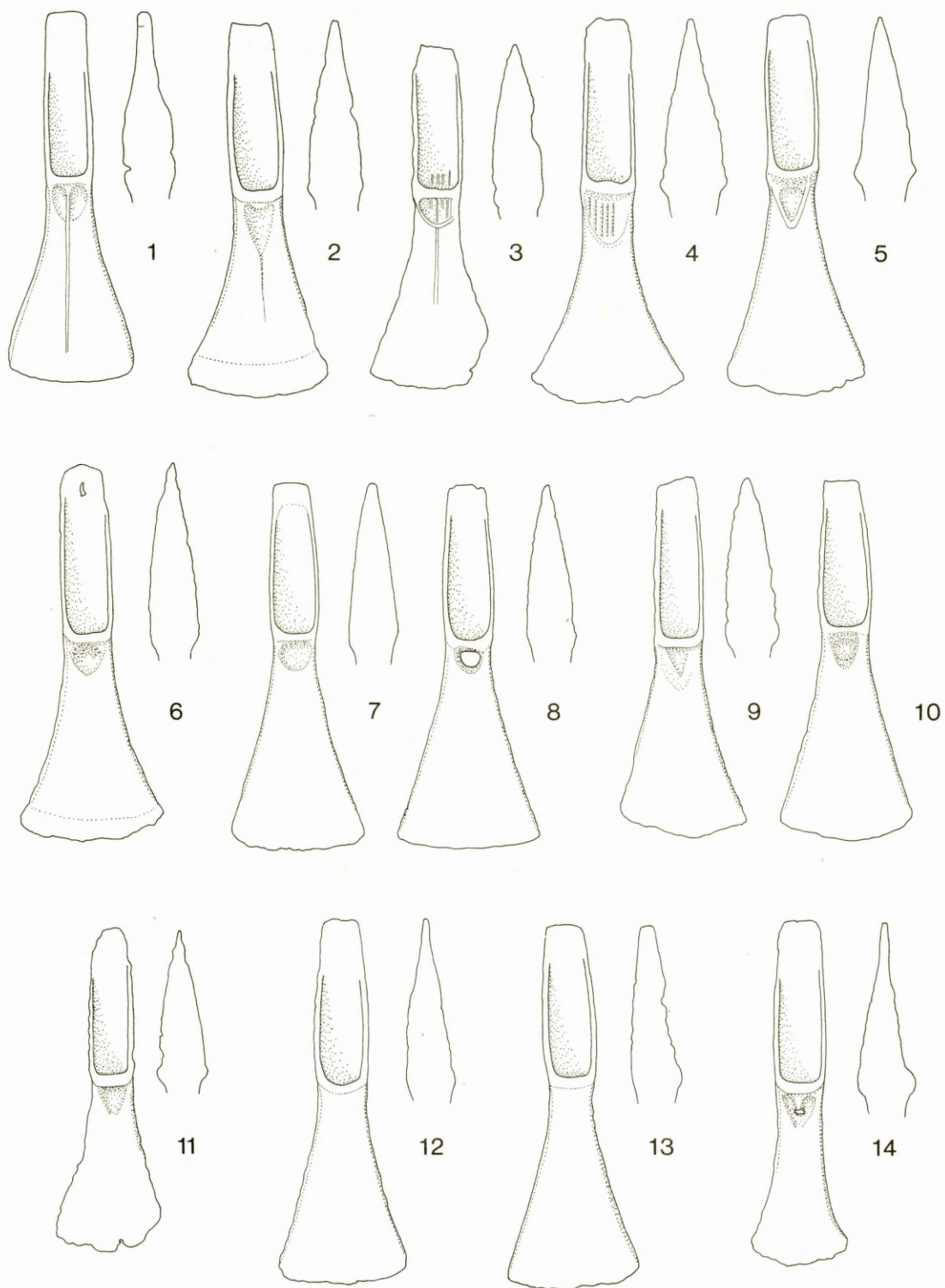


Fig. 11. Birchington hoard.

Fig 12A

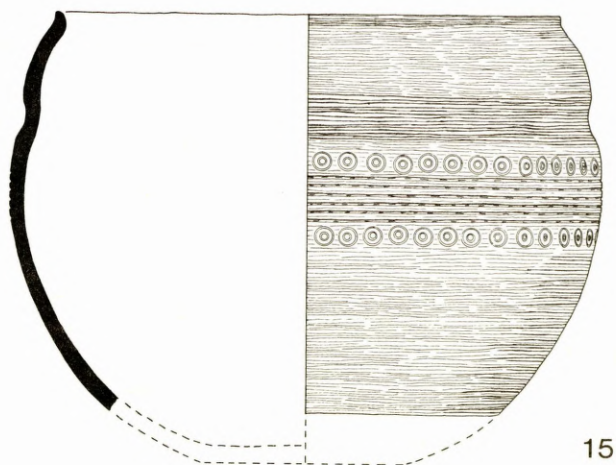


Fig 12B

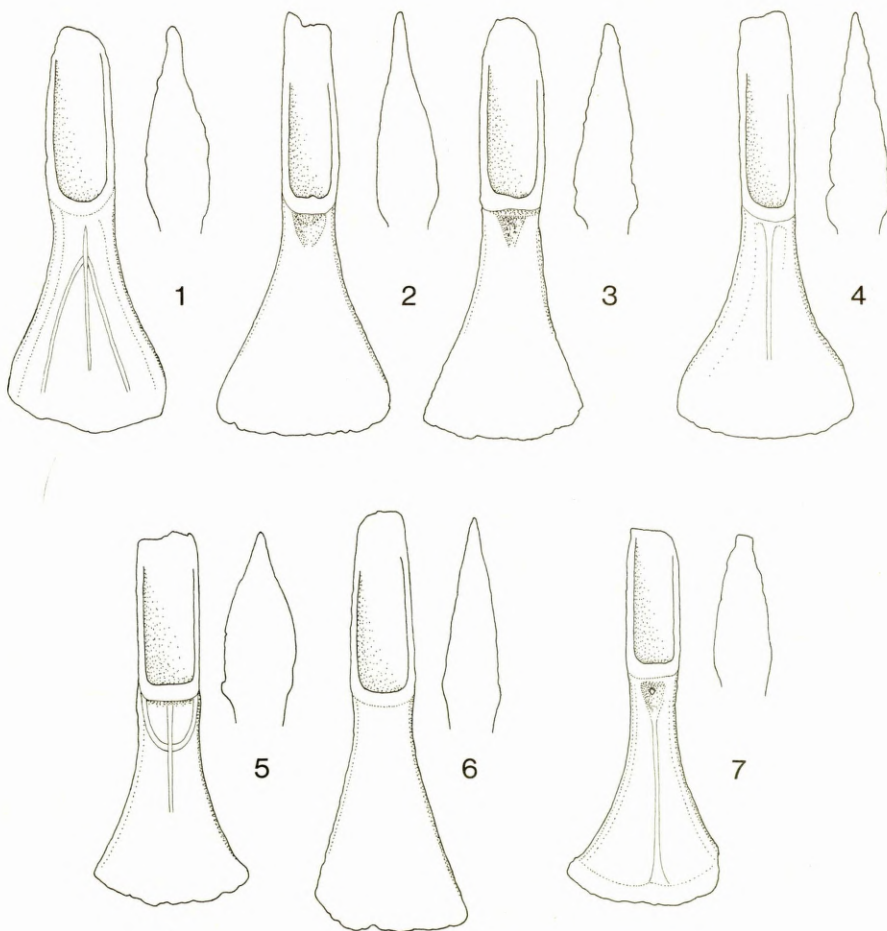


Fig. 12A. Birchington hoard.
Fig. 12B. Near Canterbury hoard.

Fig 13A

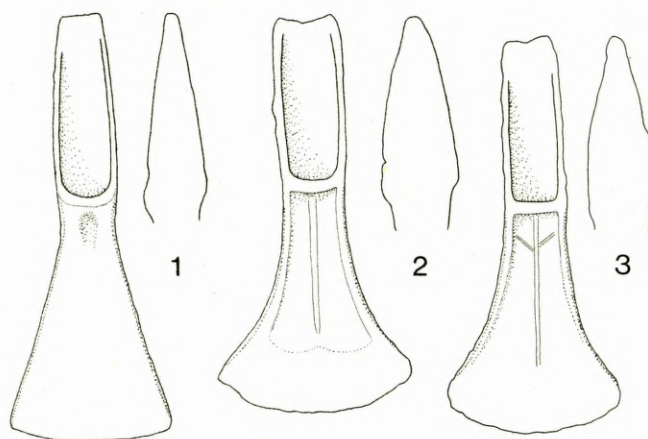


Fig 13B

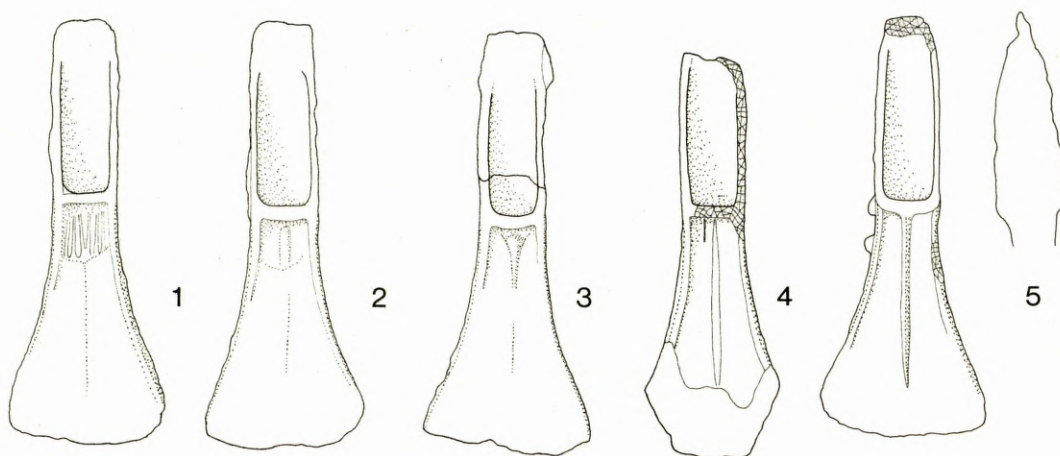


Fig 13C

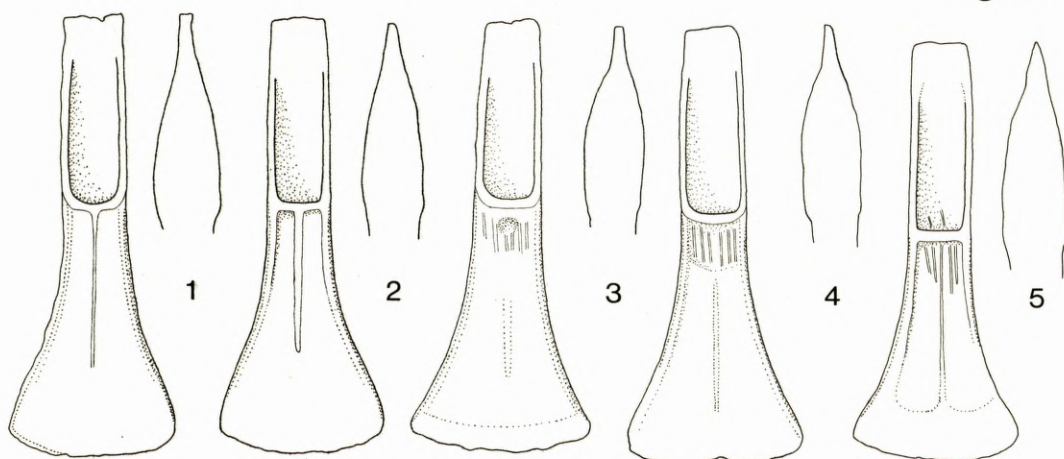


Fig. 13A. Goudhurst hoard.

Fig. 13B. Billingshurst hoard.

Fig. 13C. Near Bognor hoard.

Fig 14

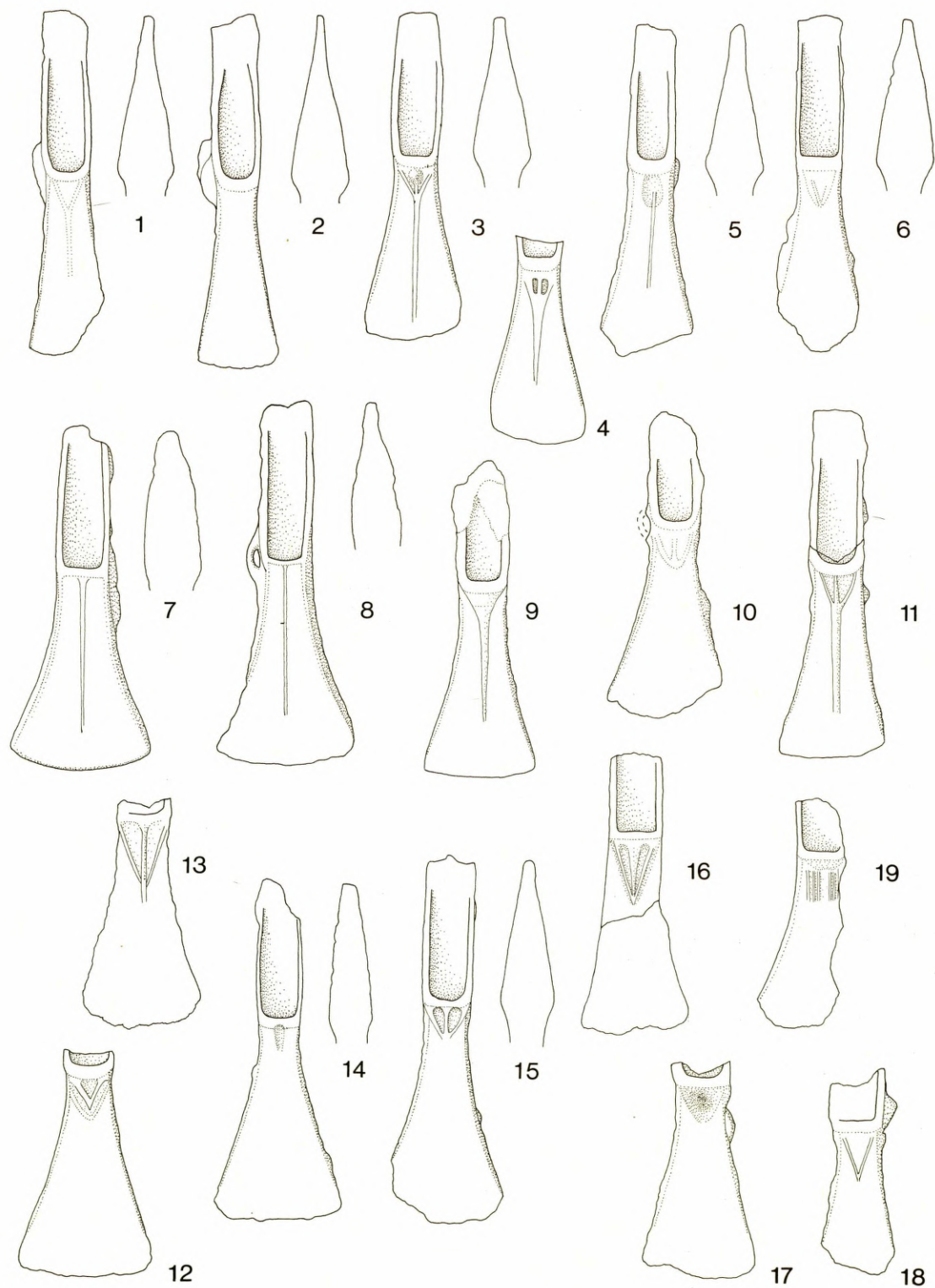


Fig. 14. Marshall Estate hoard.

Fig 15A

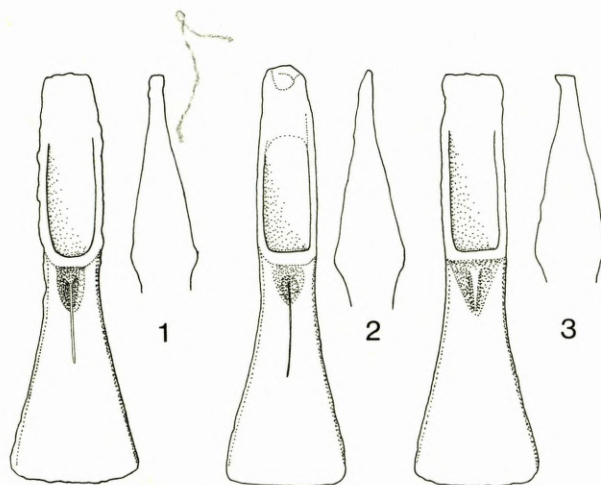


Fig 15B

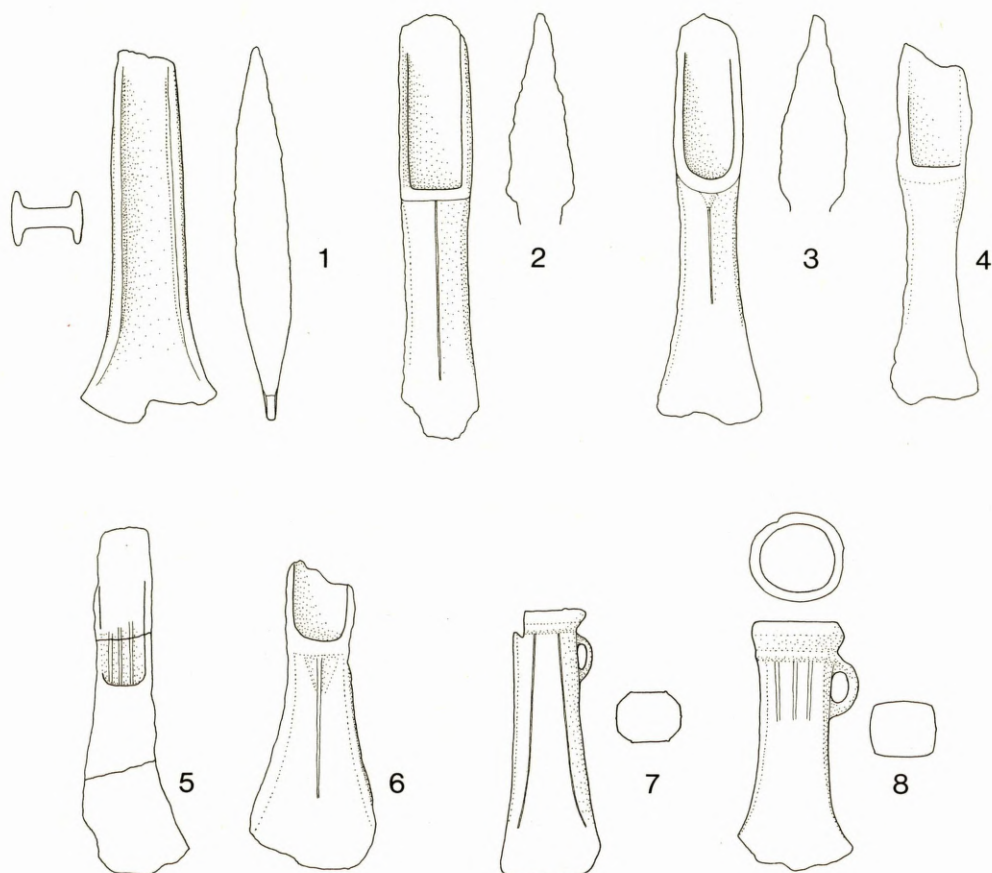


Fig. 15A. Blackrock hoard.
Fig. 15B. Sidlesham hoard.

Fig 16A

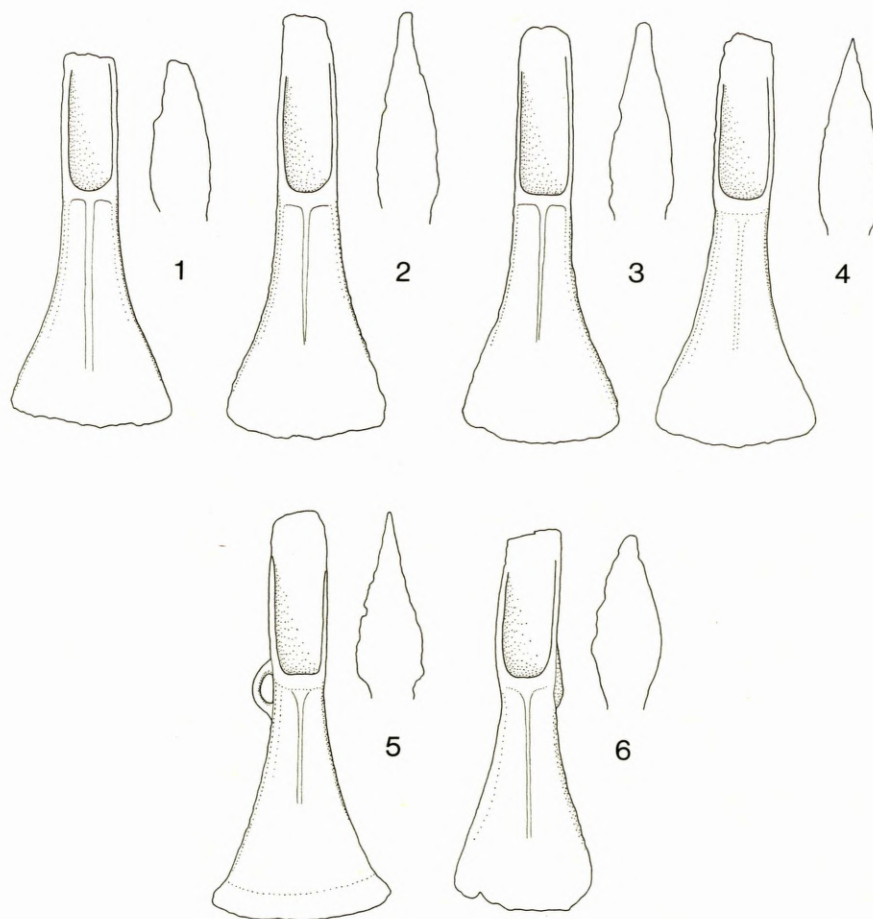


Fig 16B

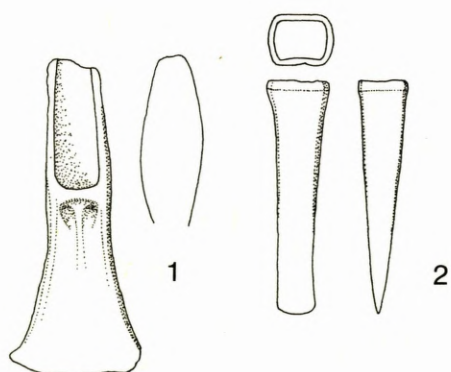


Fig 16C

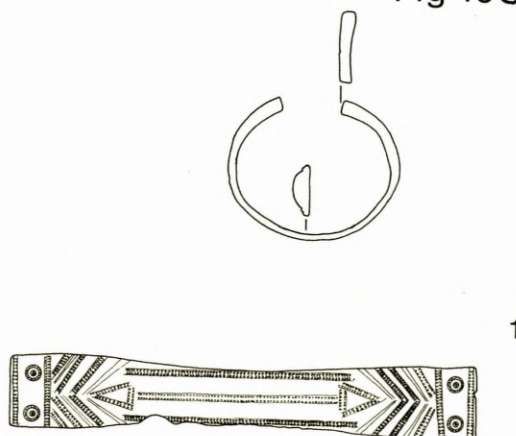


Fig. 16A. Rustington hoard.

Fig. 16B. Highworth hoard.

Fig. 16C. Helston hoard.

Fig 17A

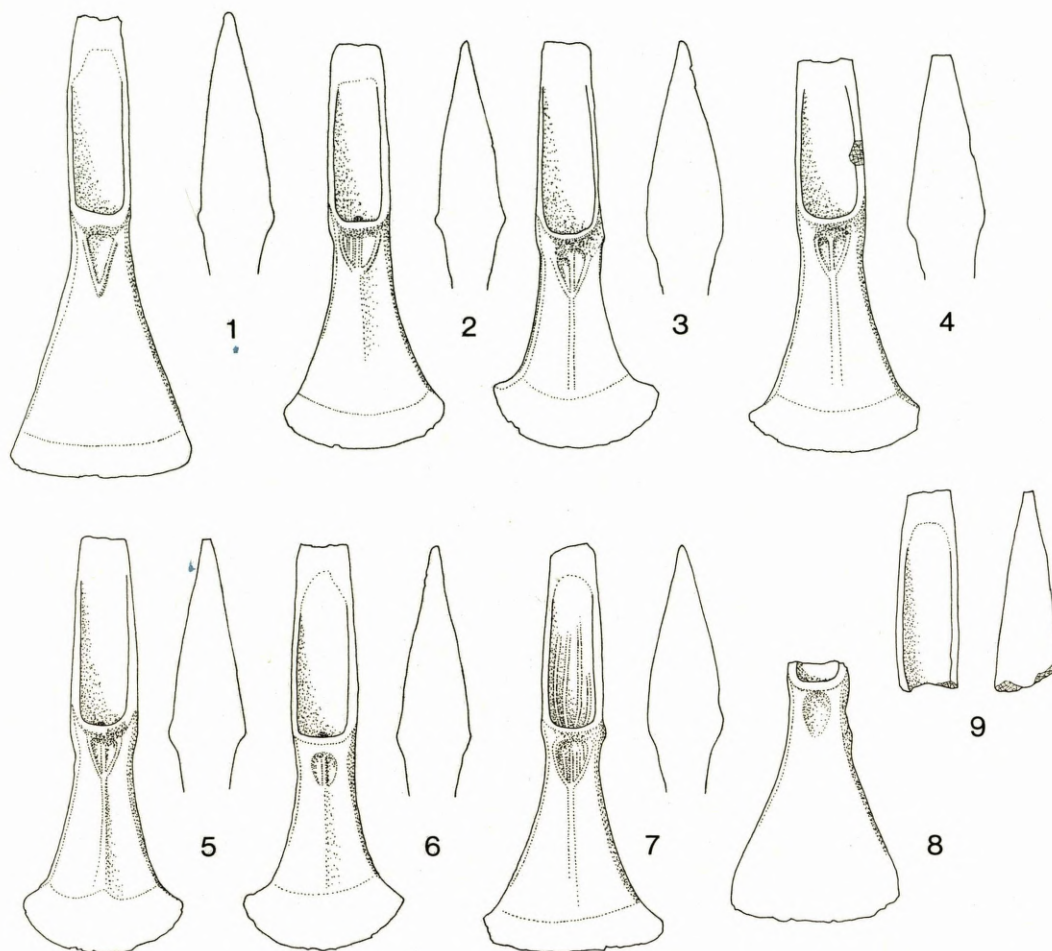


Fig 17B

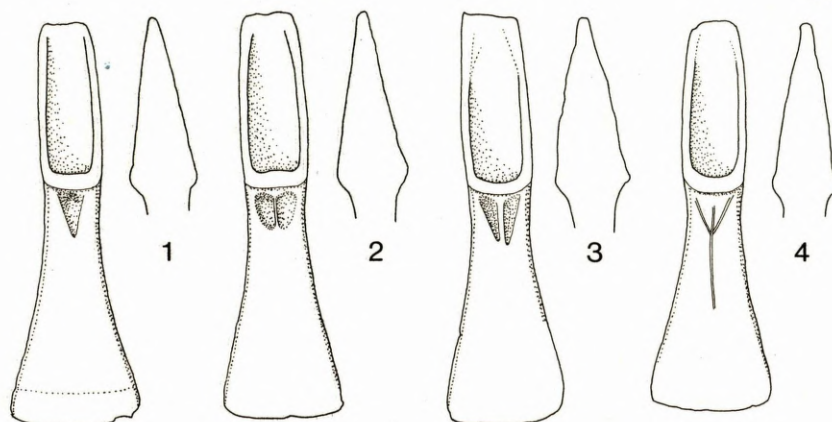


Fig. 17A. Dommiers hoard.
Fig. 17B. Bourneville hoard.

Fig 18

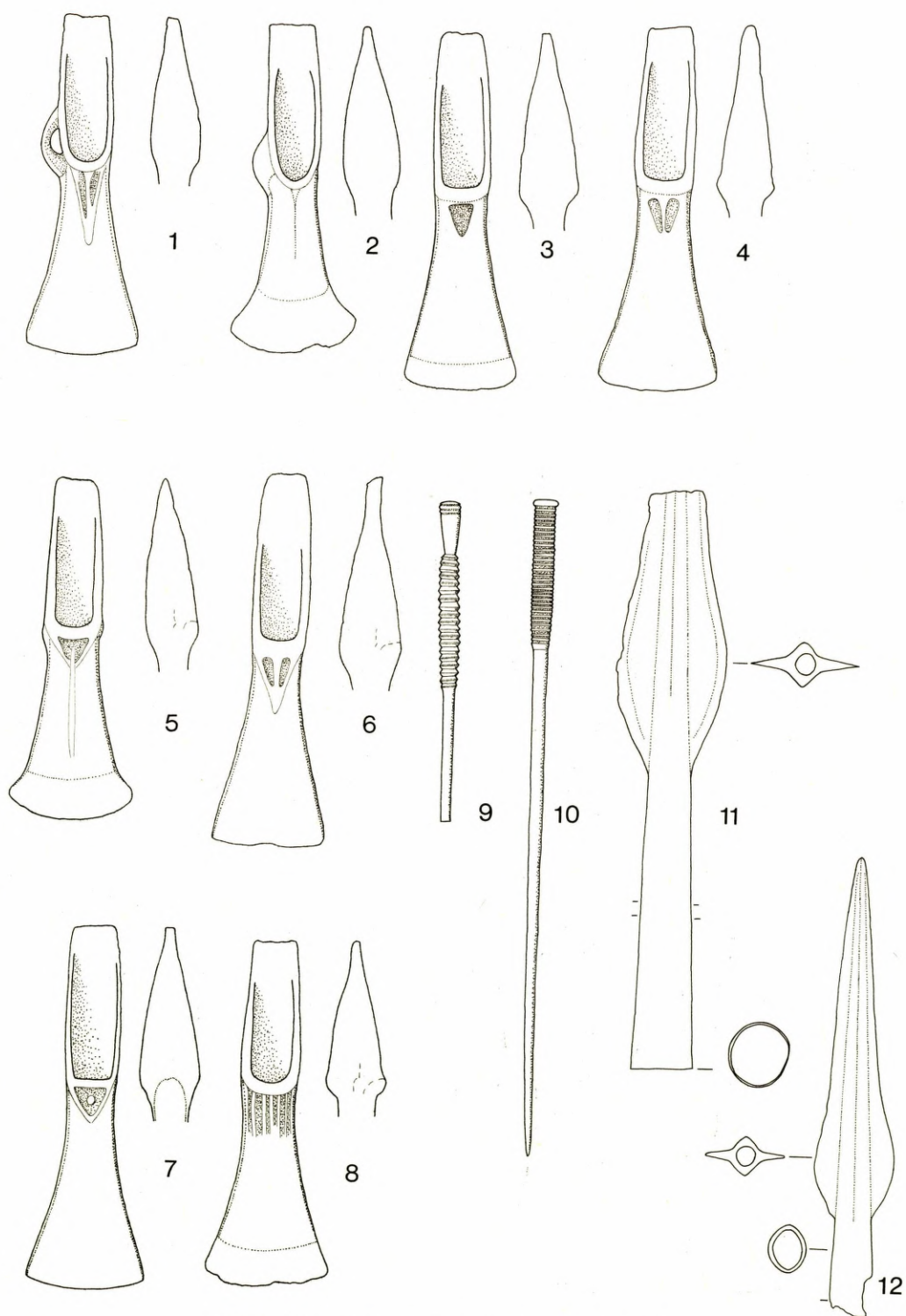


Fig. 18. Baux-Sainte-Croix hoard.

Fig 19A

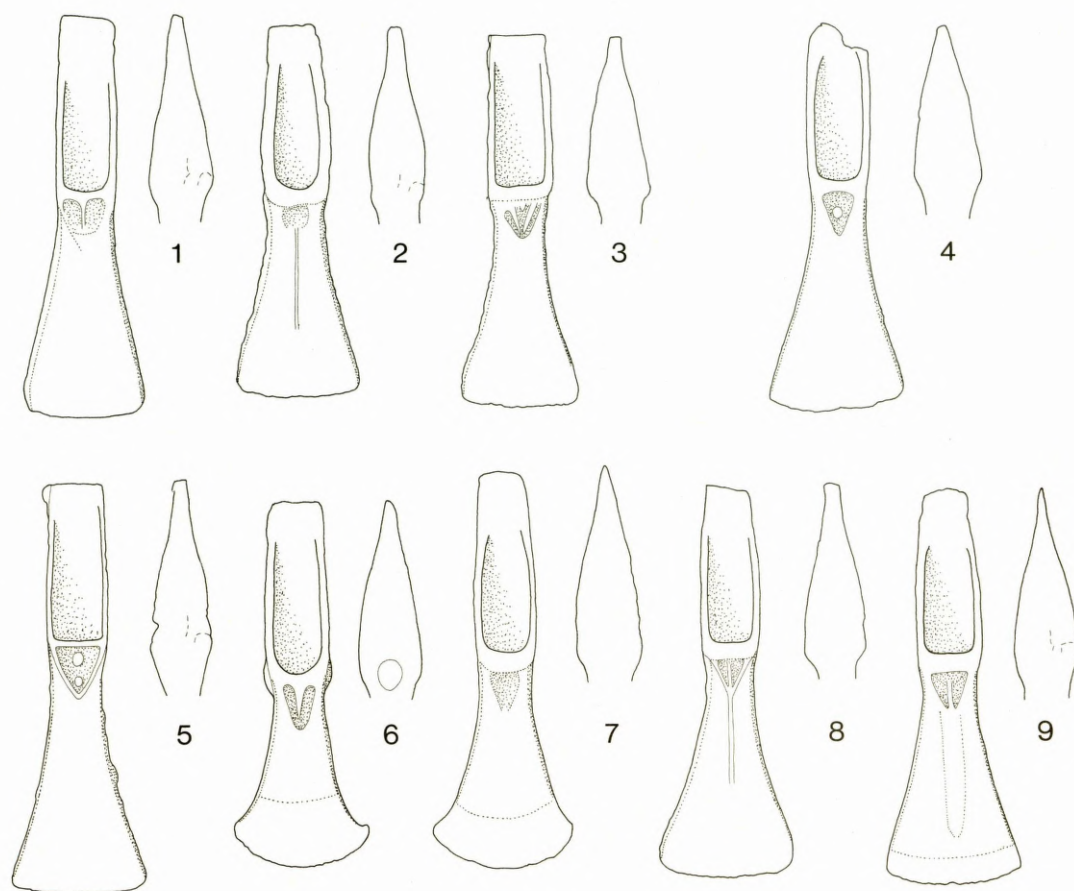


Fig 19B

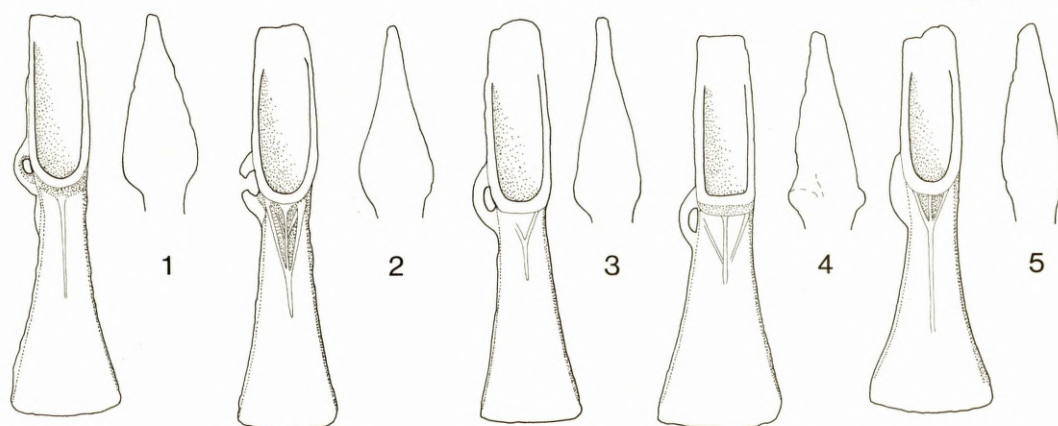


Fig. 19A. Bourlay hoard.
Fig. 19B. La Chapelle hoard.

Fig 20

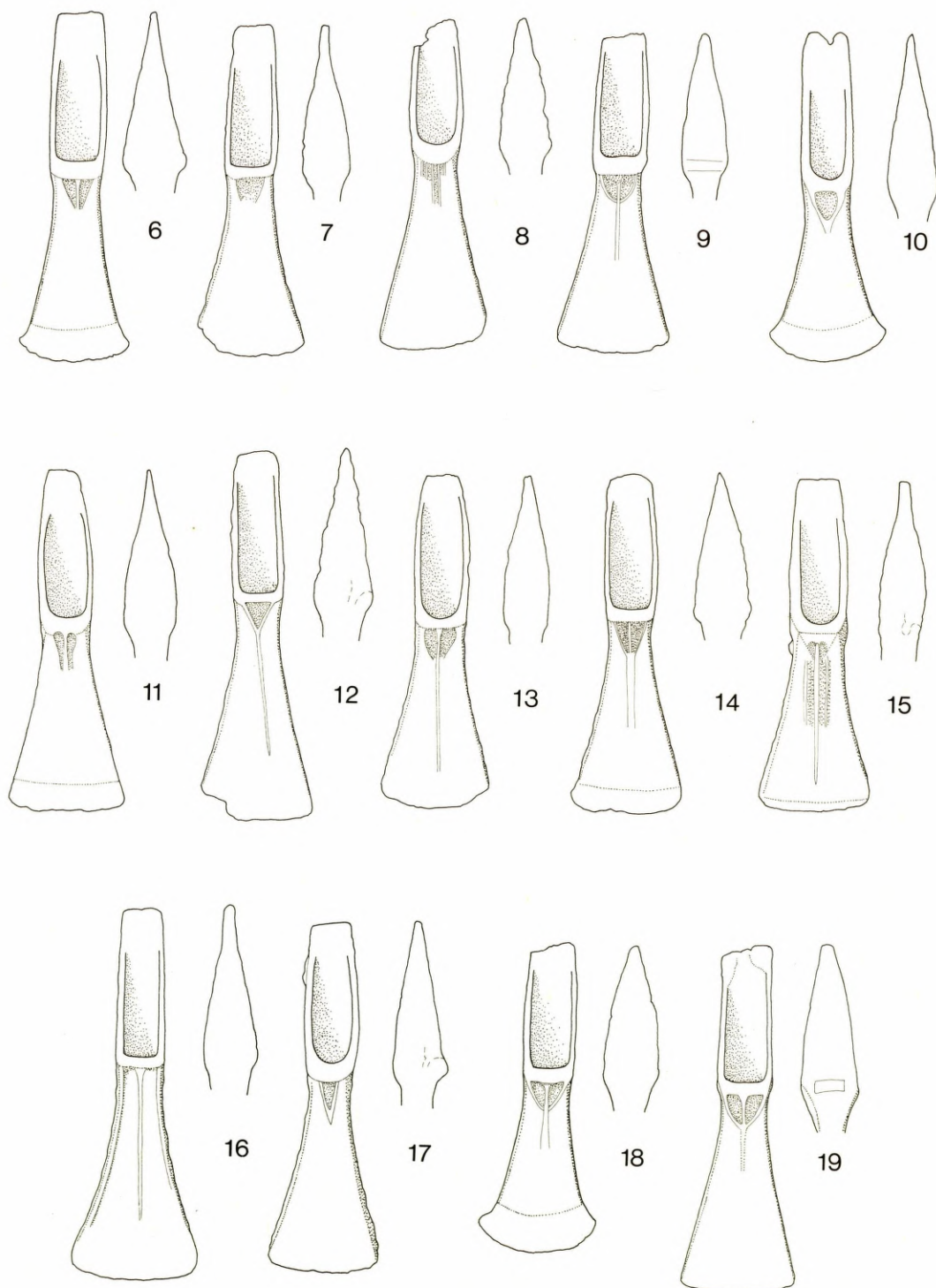


Fig. 20. La Chapelle hoard.

Fig 21A

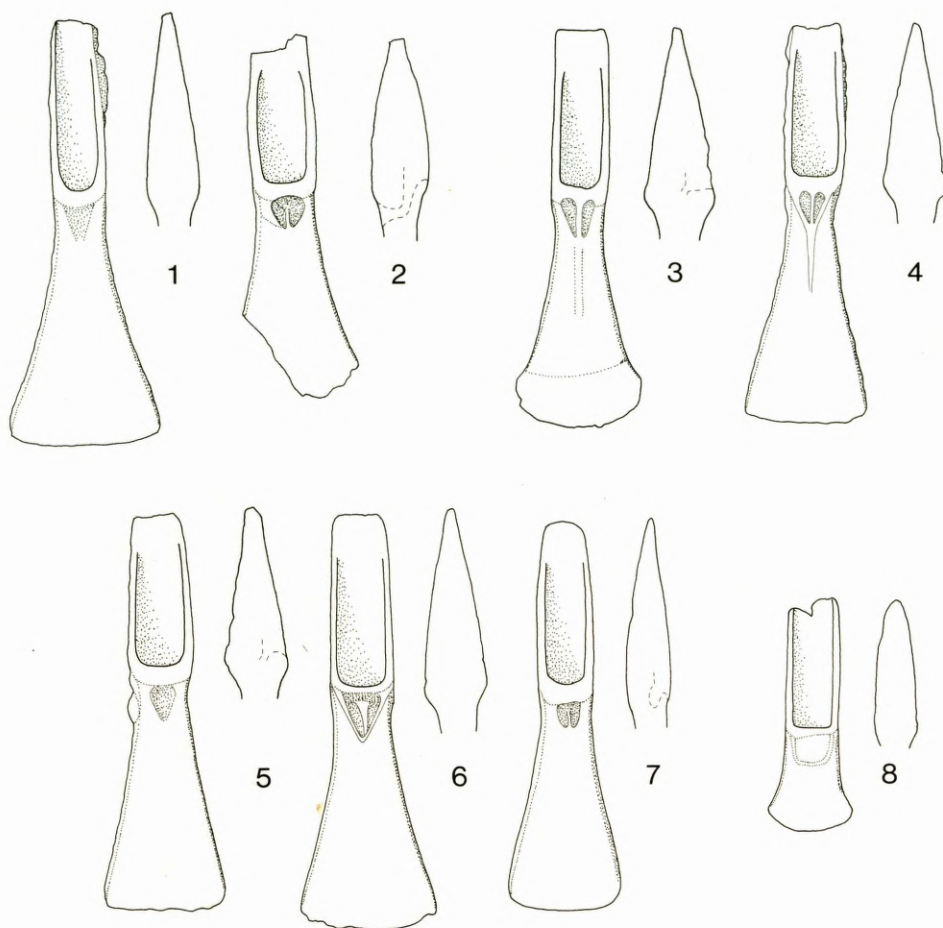


Fig 21B

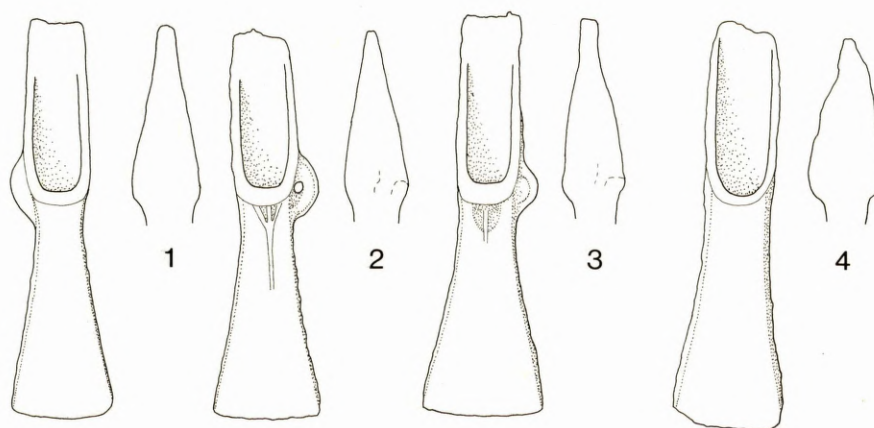


Fig. 21A. Gisors hoard.
Fig. 21B. Heuqueville hoard.

Fig 22

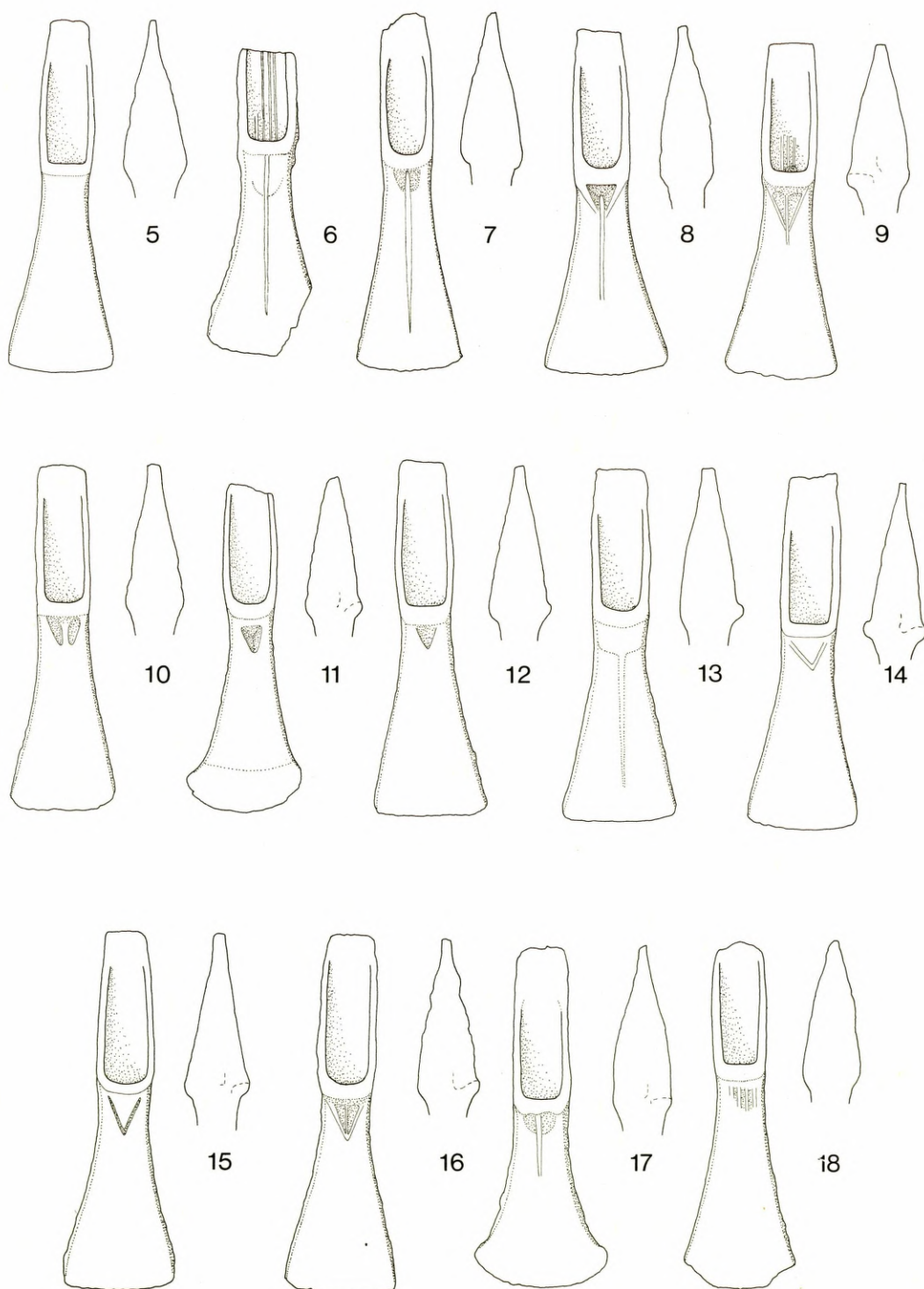


Fig. 22. Heuqueville hoard.

Fig 23A

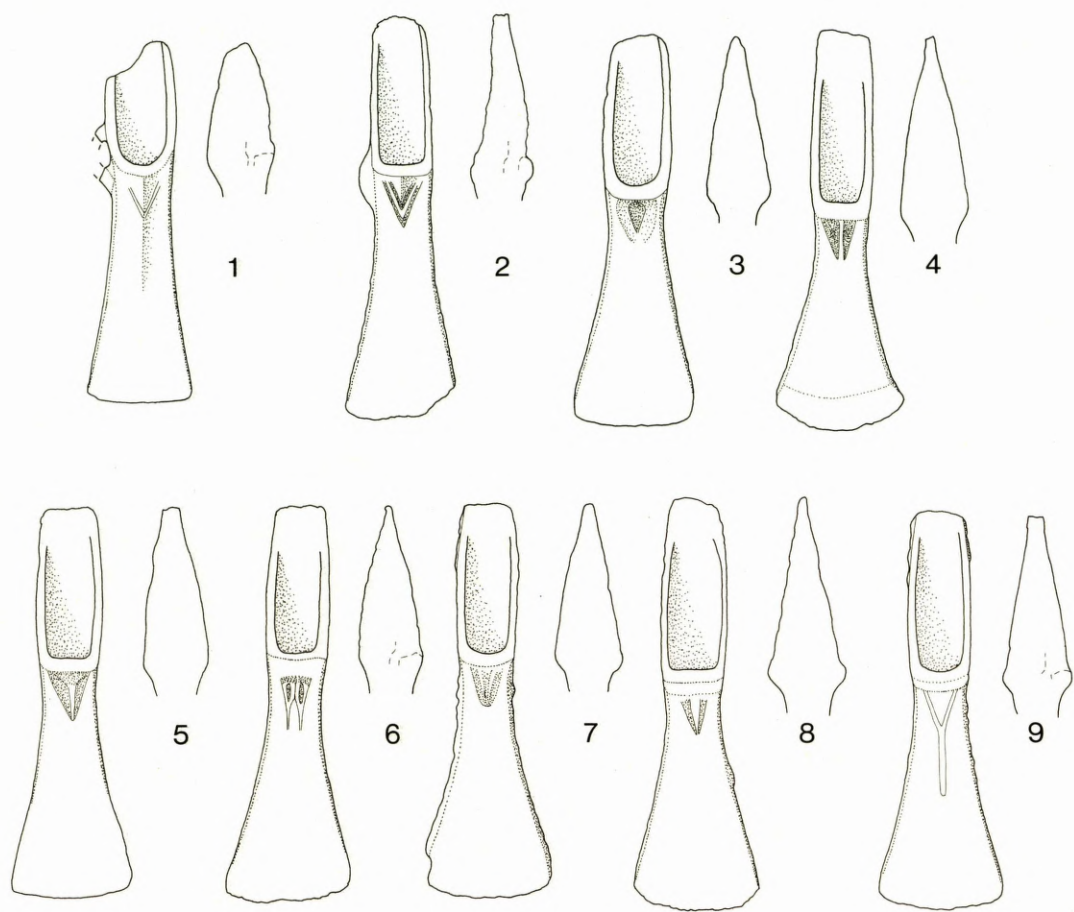


Fig 23B

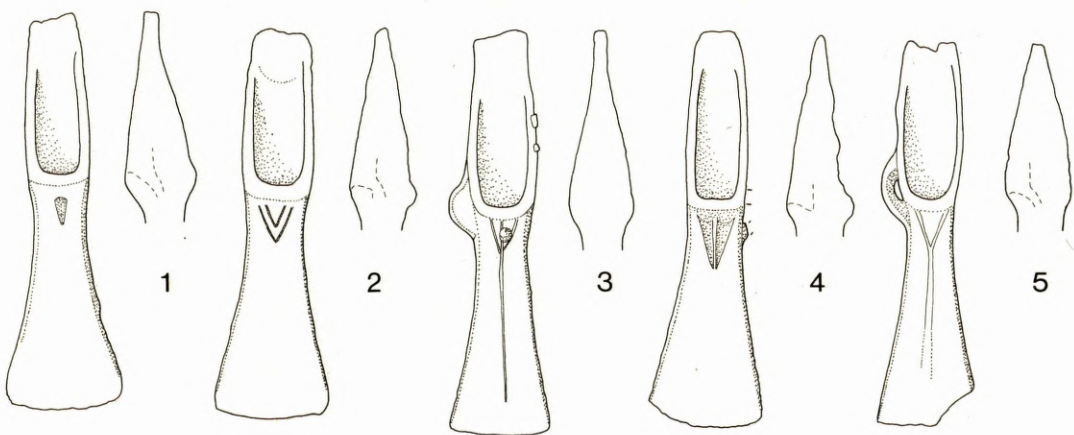


Fig. 23A. Livet hoard.
Fig. 23B. Rouen hoard.

Fig 24

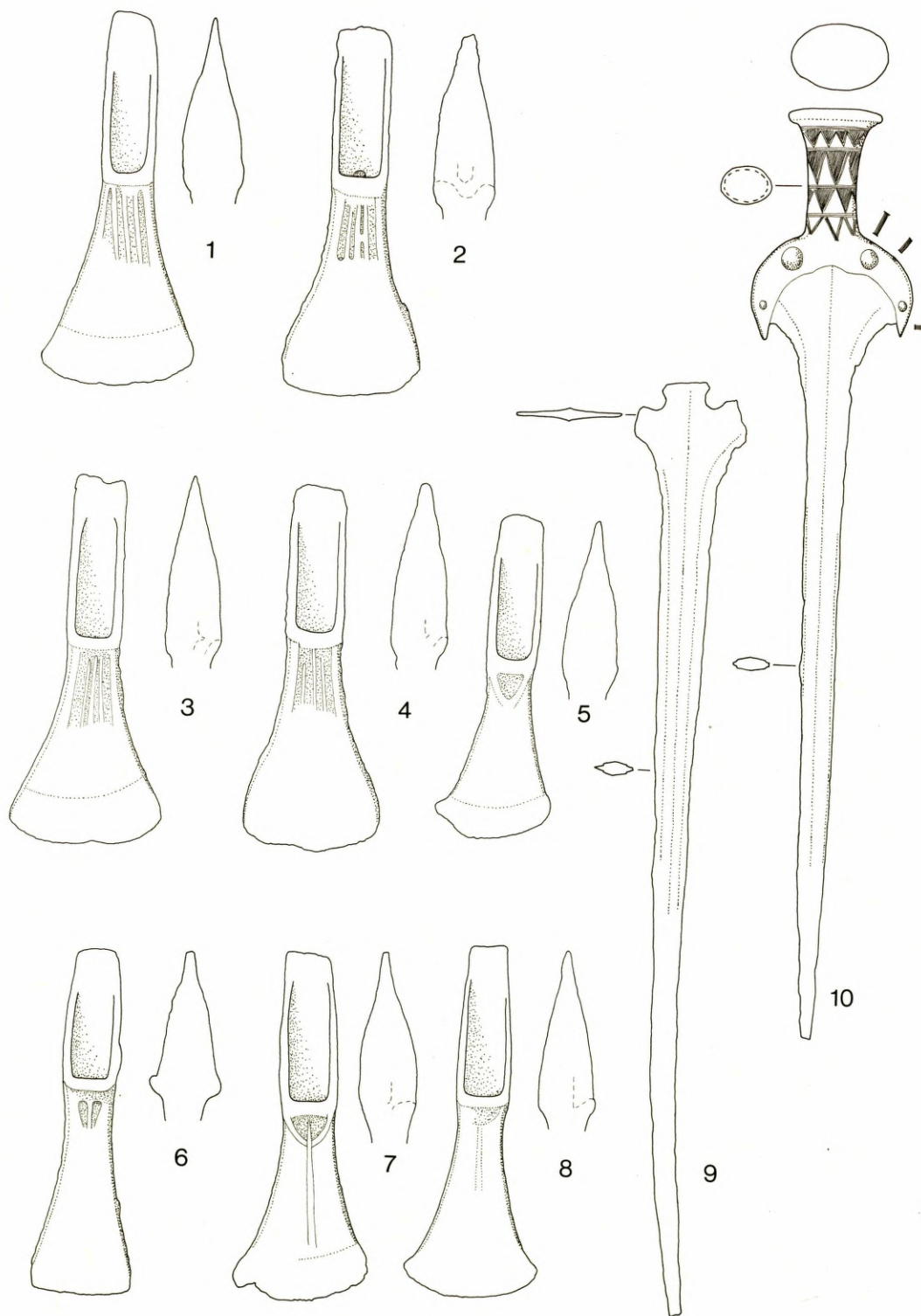


Fig. 24. Mont-Saint-Aignan hoard.

Fig 25

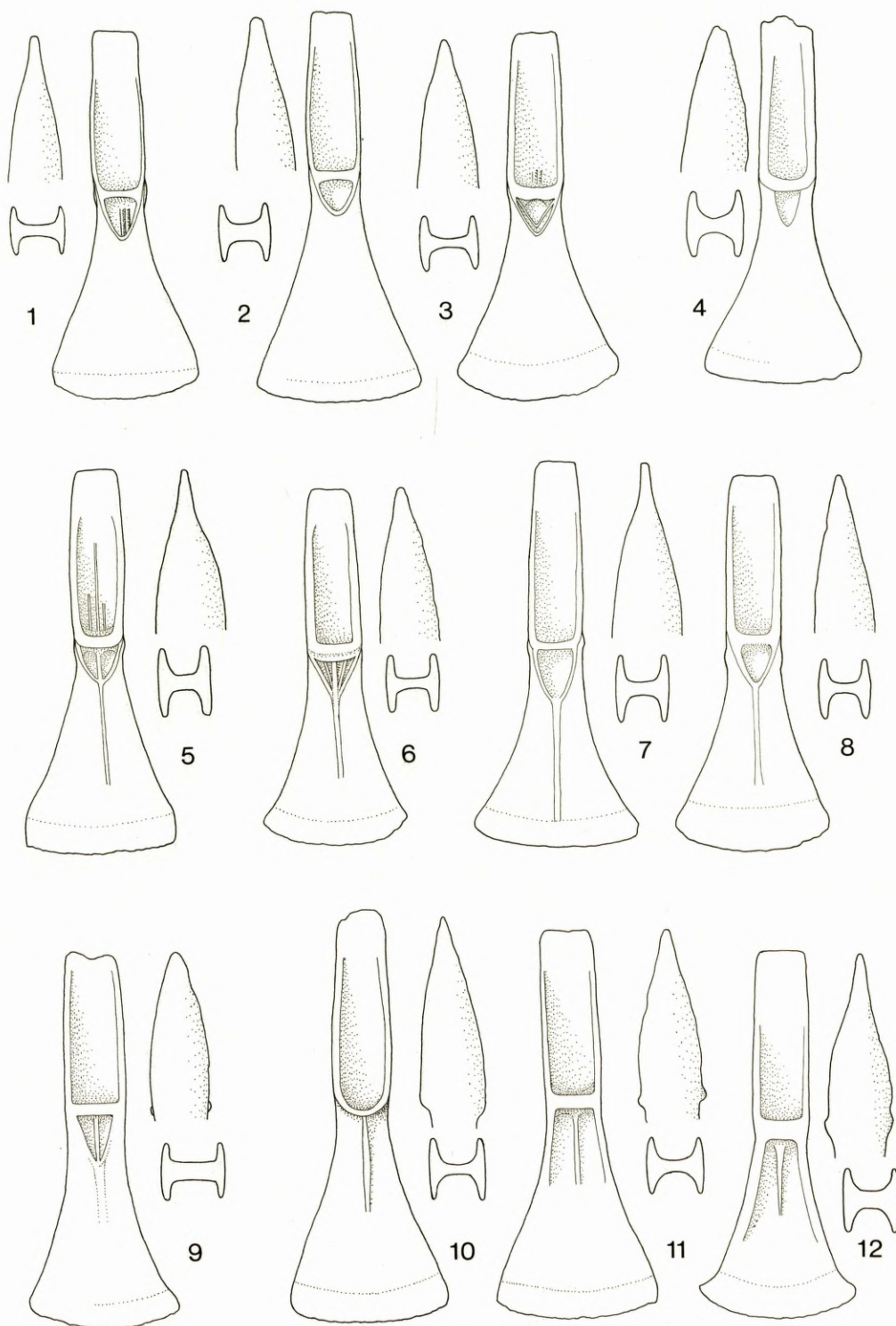


Fig. 25. Bernay-Ponthoile hoard.

Fig 26

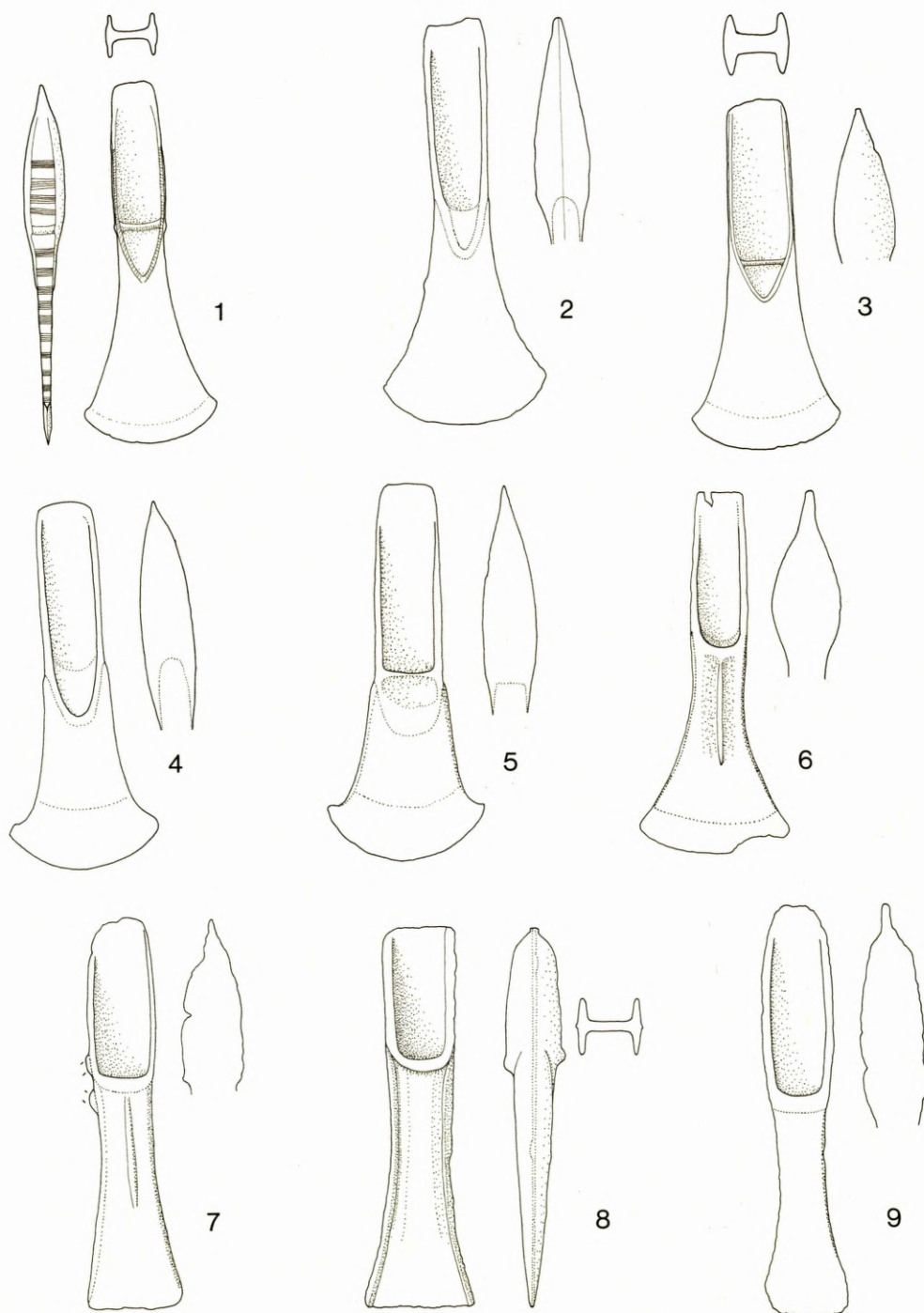


Fig. 26. 1. Faubourg de Bresles. 2. Heurteauville.
3. Amiens. 4. Battel. 5. Heusden. 6. Chalton.
7. Doddington. 8. Near Reims. 9. Wetteren.

Fig 27

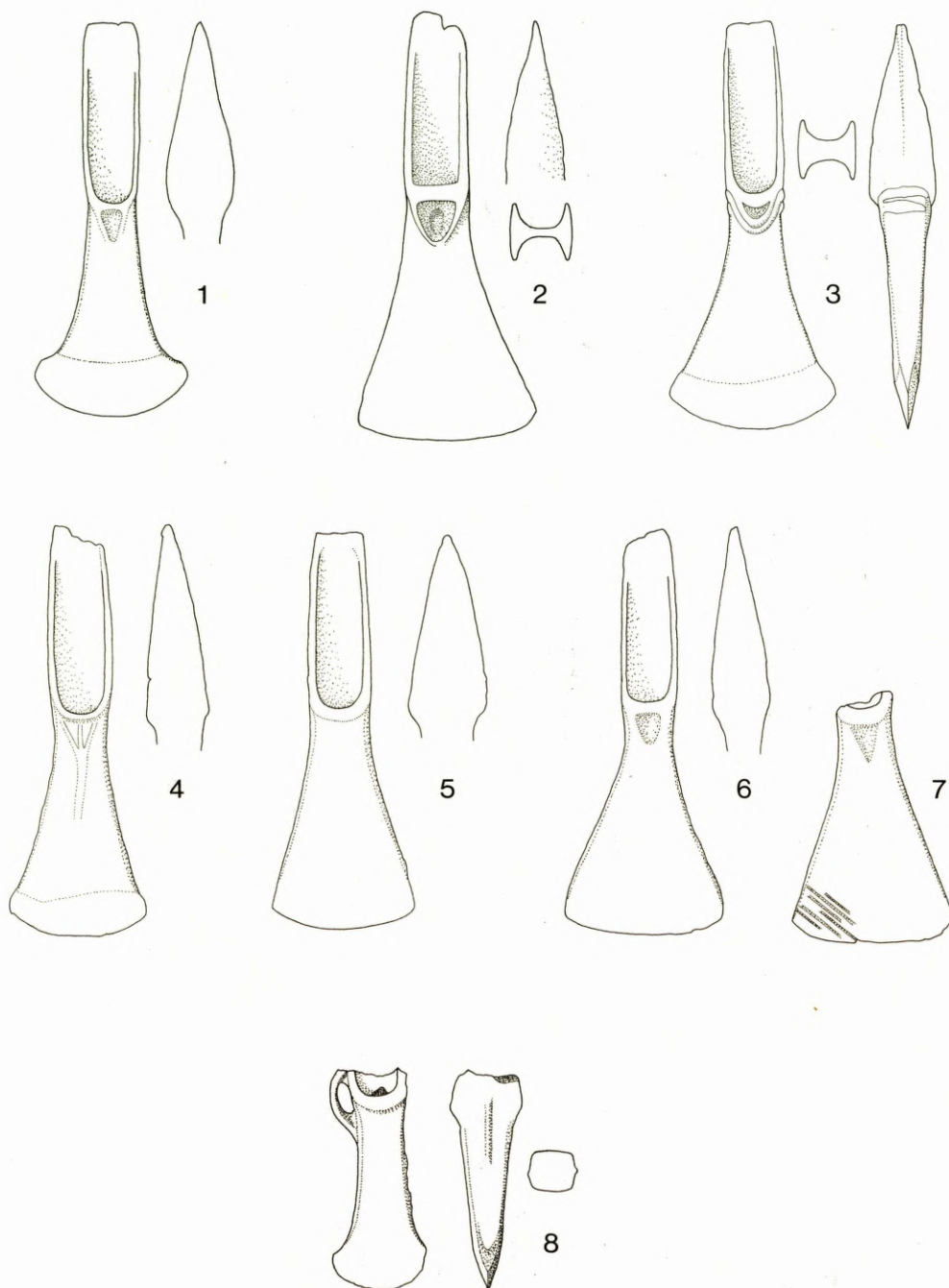


Fig. 27. 1. Waasmunster. 2. Lille. 3. Amiens.
4. Beirvald. 5. Schoonaarde. 6. Huise. 7. Asper.
8. Angle Ditch.

Fig 28

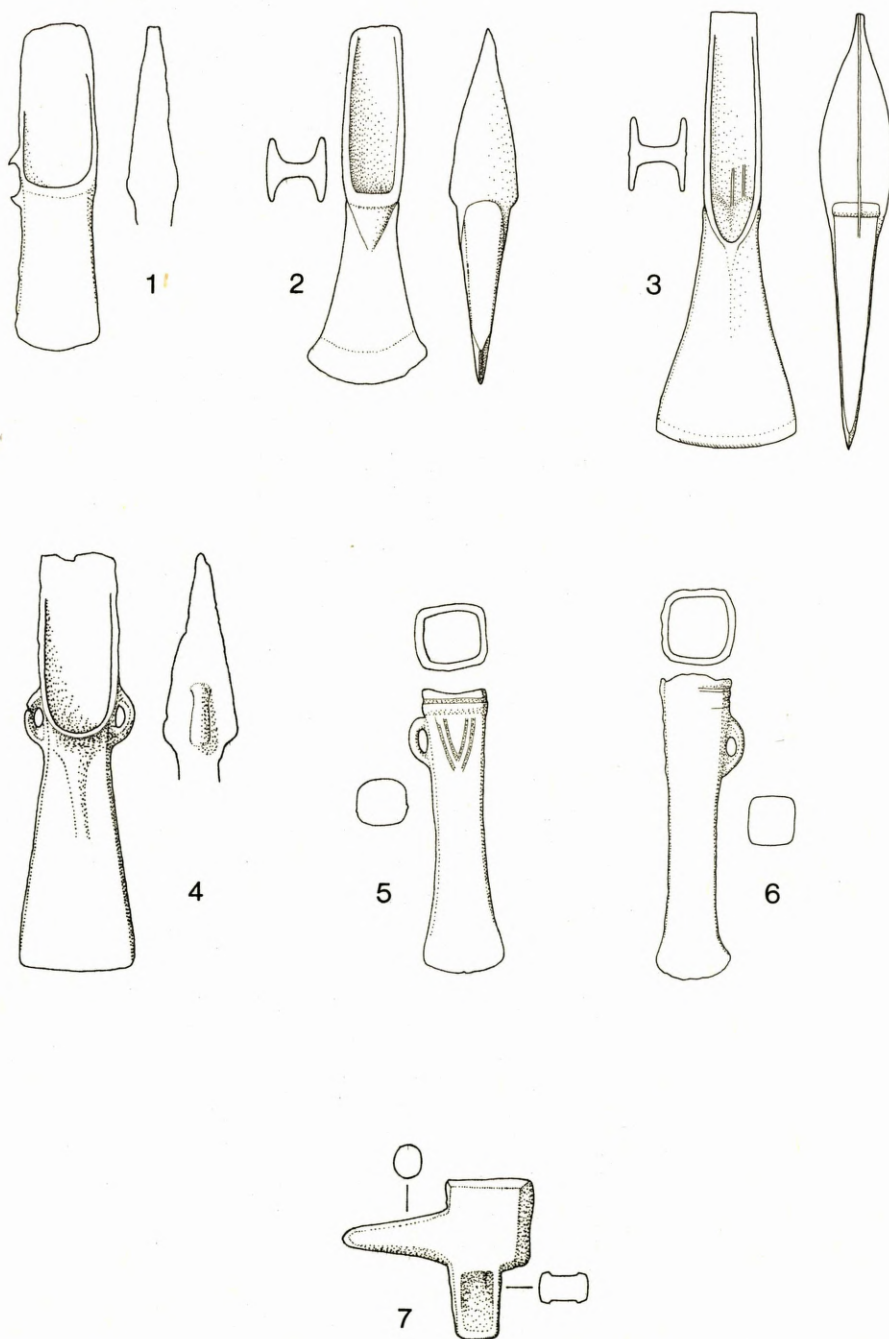


Fig. 28. 1. Wetteren. 2. Maaseick. 3. Billingham.
4. Ballincollig. 5. Barrington. 6. ?Peterborough area.
7. Angerville area.

Fig 29

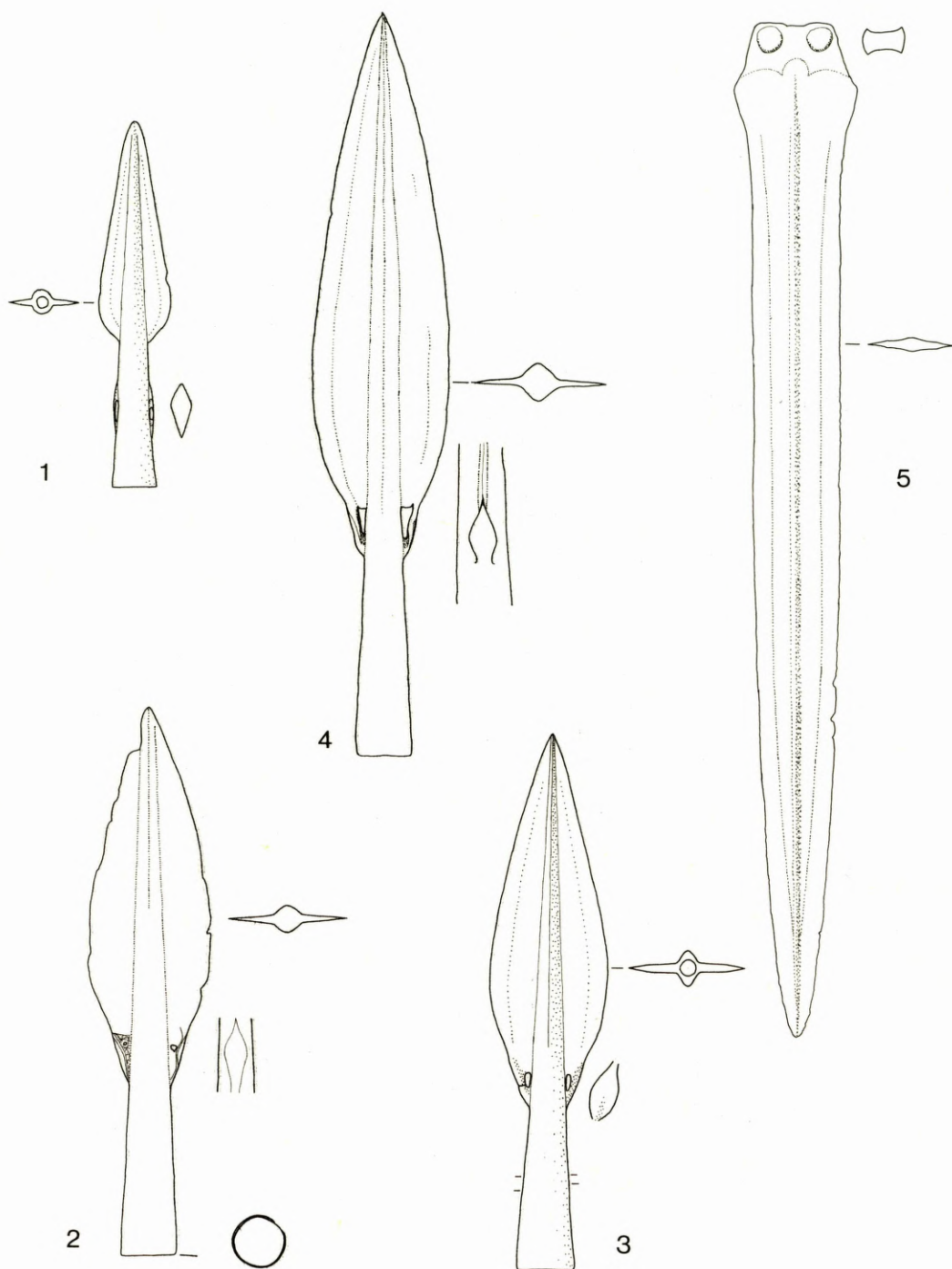


Fig. 29. 1. Seine at Paris. 2. Oise at Ile du Grand Peuple.
3. Amiens. 4. Seine at Villeneuve-Saint-Georges.
5. Seine at Paris.

Fig 30

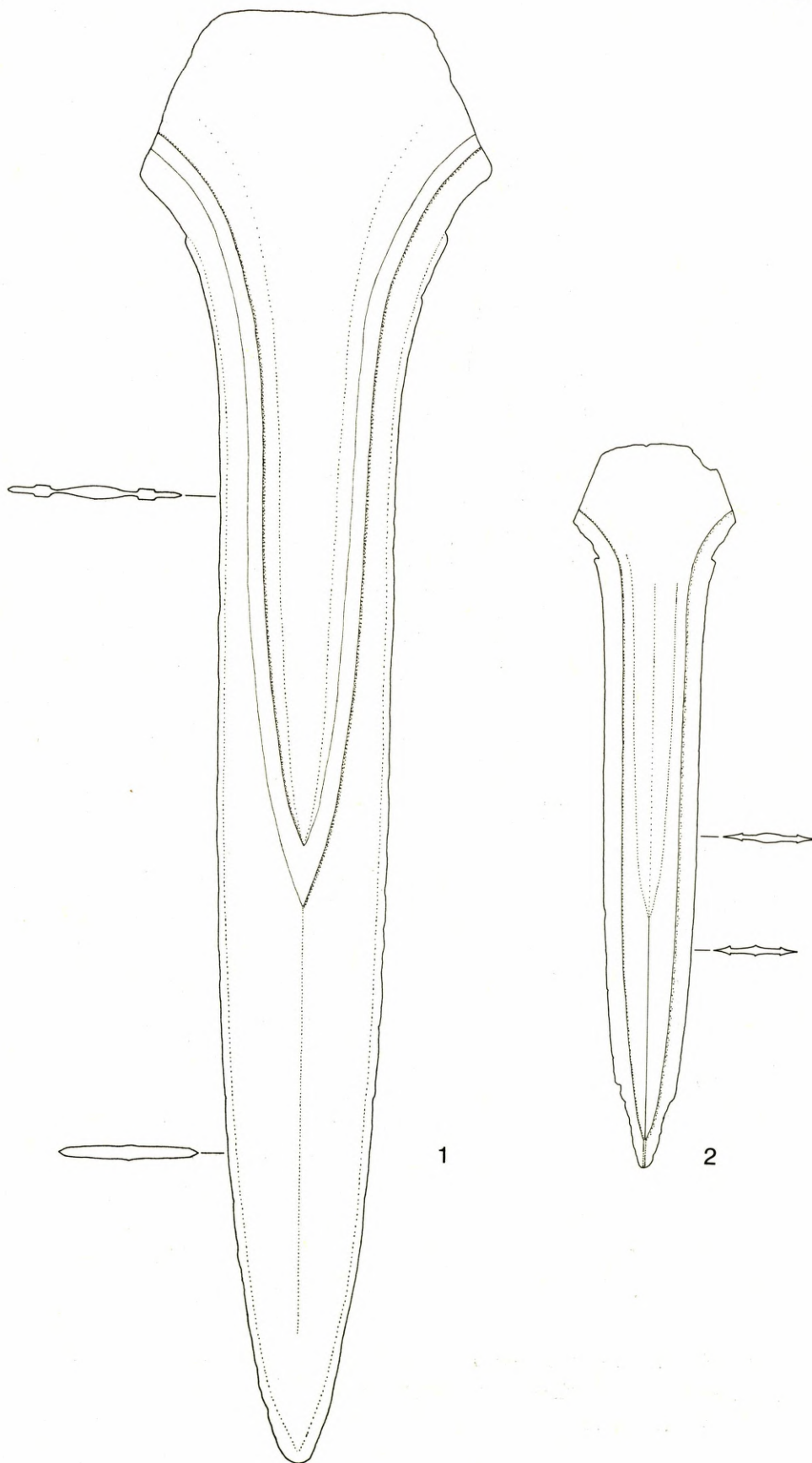


Fig. 30. 1. Beaune.
2. Kimberley.

Fig 31

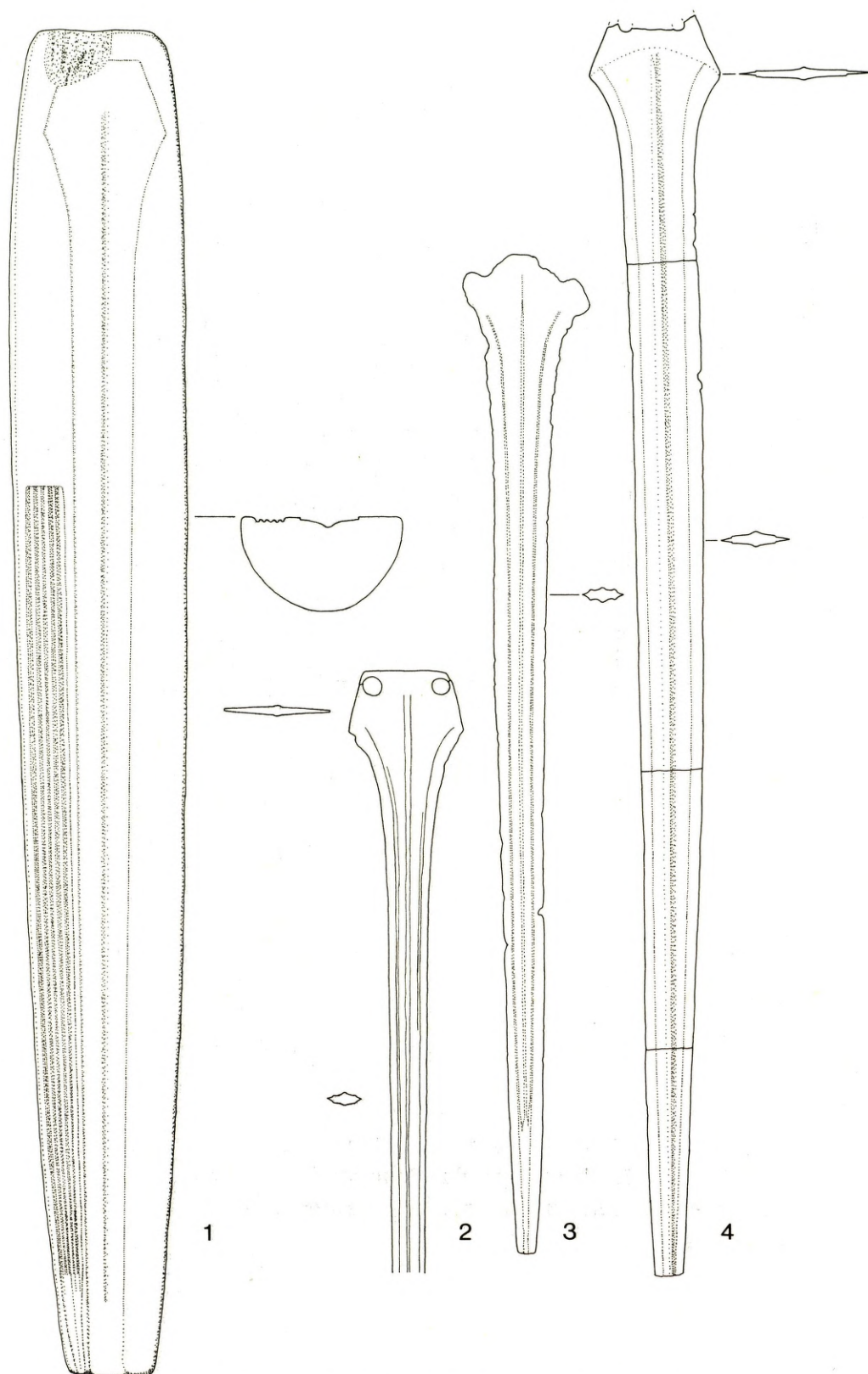


Fig. 31. 1. Knighton Down. 2. Noailles. 3. Seine at Paris. 4. Gottem.

Fig 32

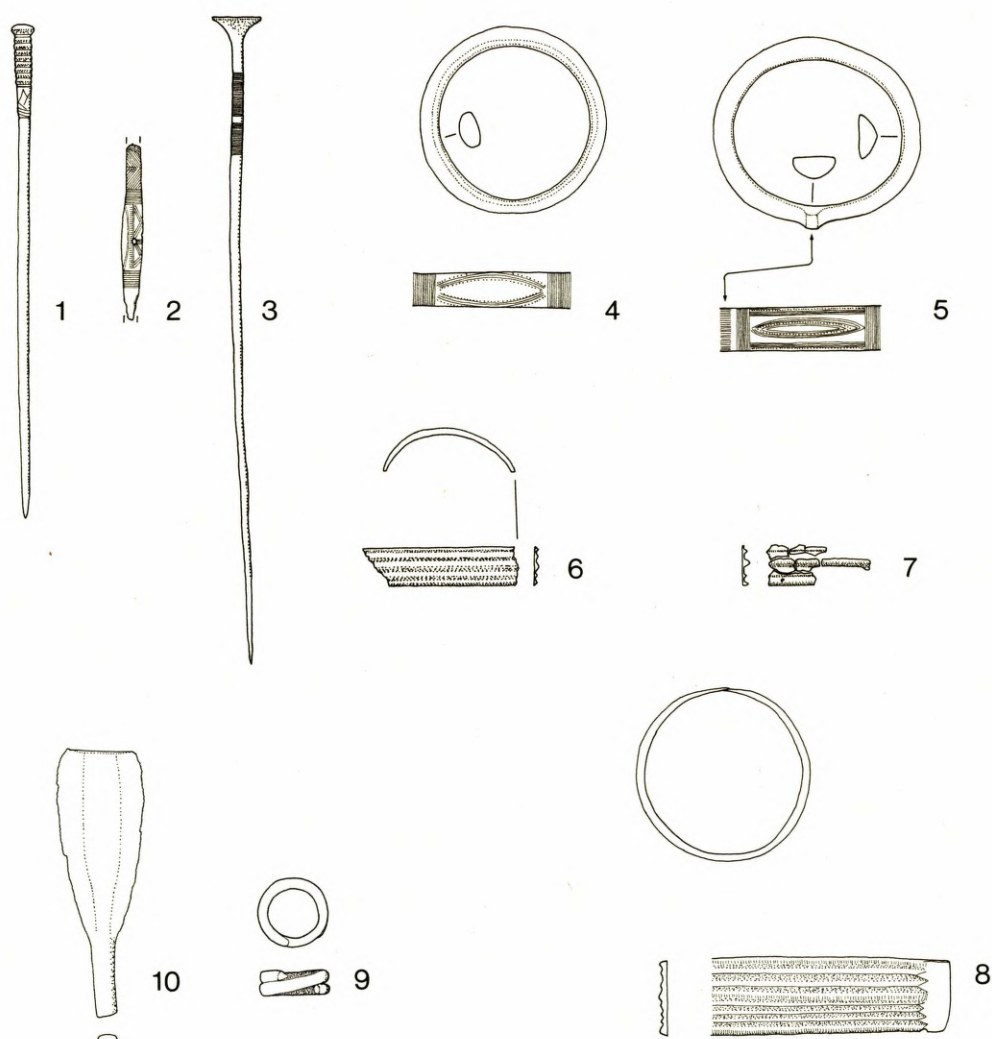


Fig. 32. 1. Seine at Paris. 2. Layham. 3. Seine at Paris. 4. Gisors. 5. Saint-Cyr-du-Vaudreuil. 6. South Lodge Camp. 7. Thorny Down. 8. Boves. 9. Maiden Castle. 10. Seine at Paris.

Fig 33

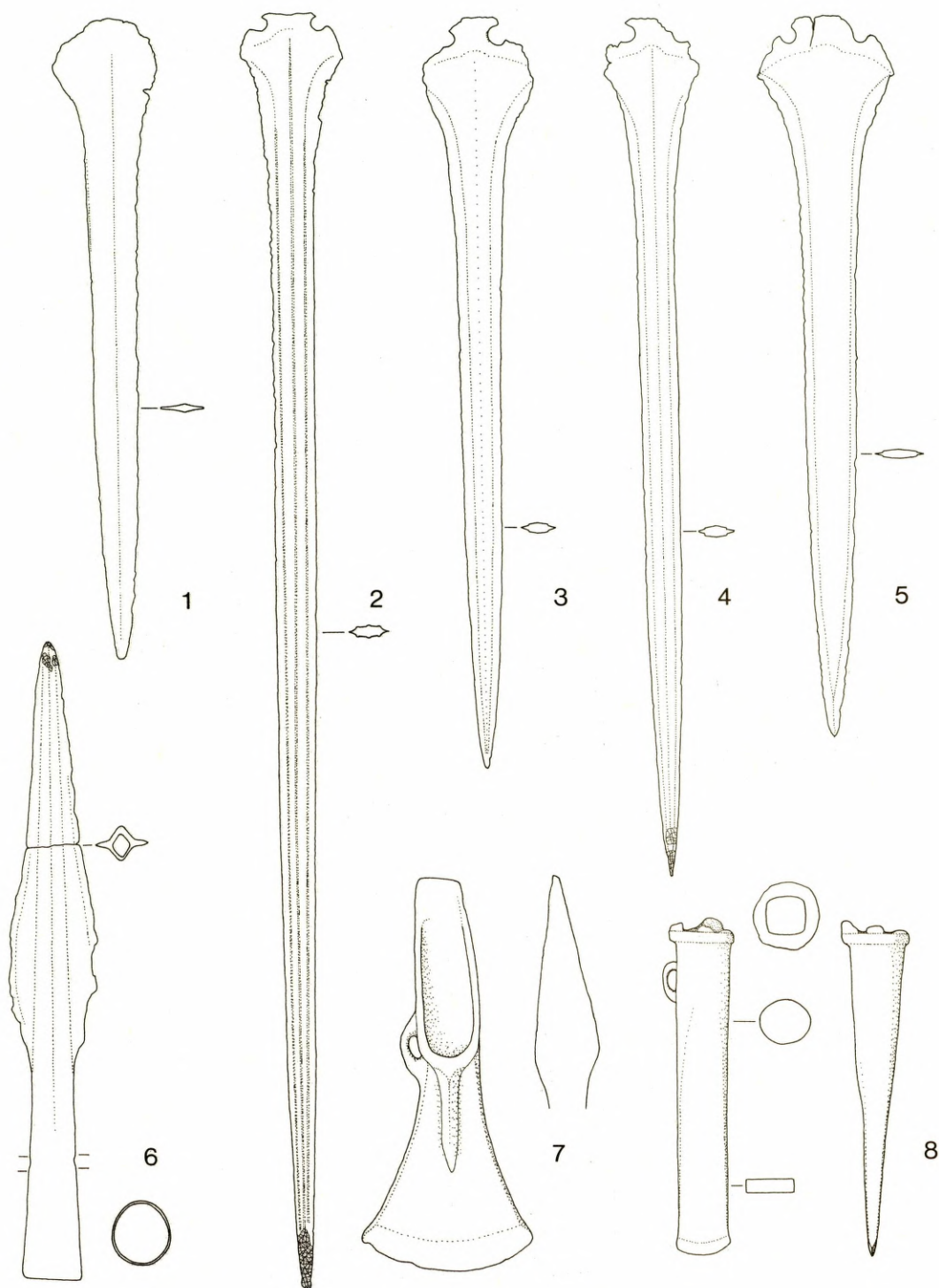


Fig. 33. Orsett hoard.

Fig 34

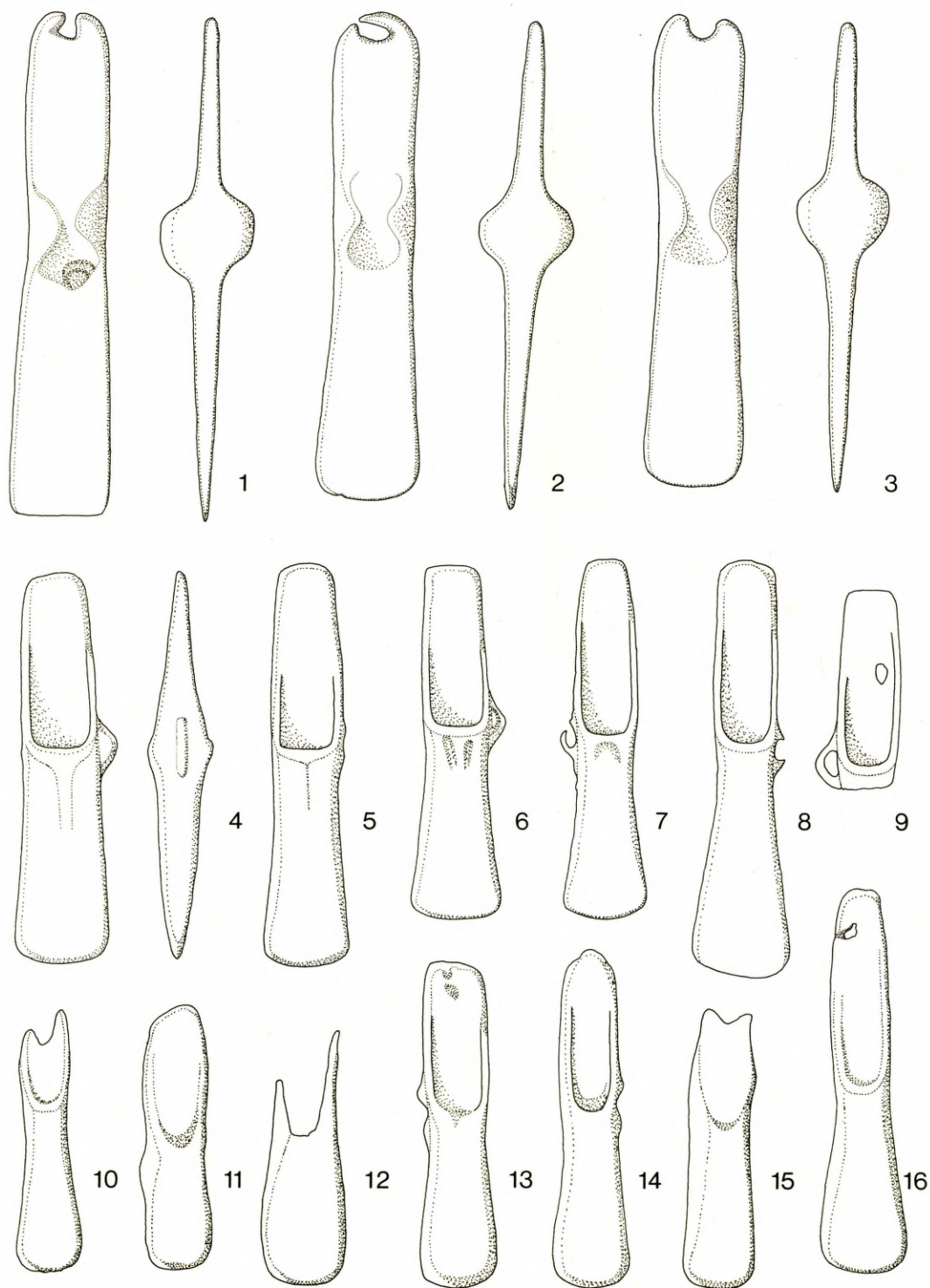


Fig. 34. Dover hoard.

Fig 35

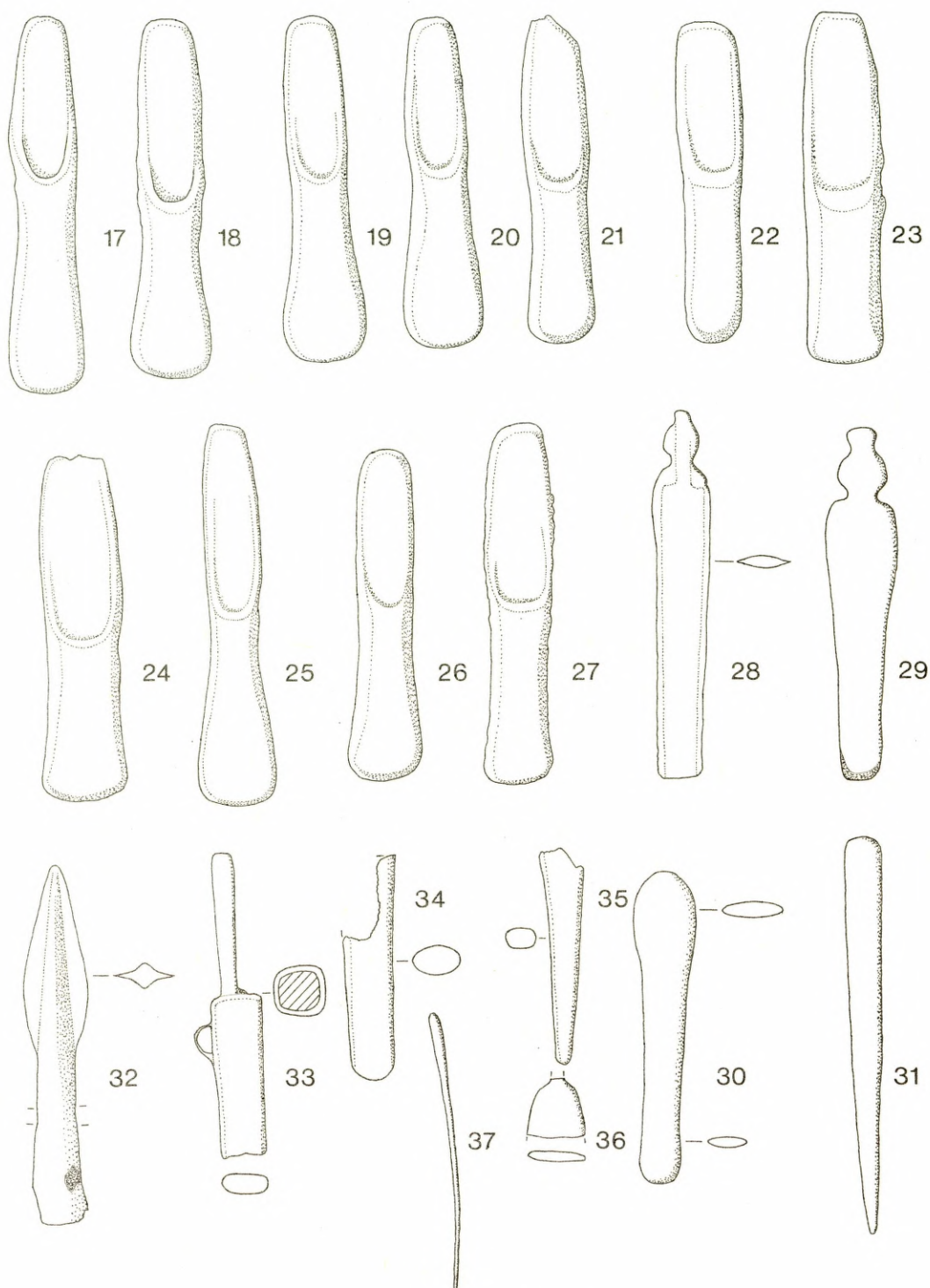


Fig. 35. Dover hoard.

Fig 36A

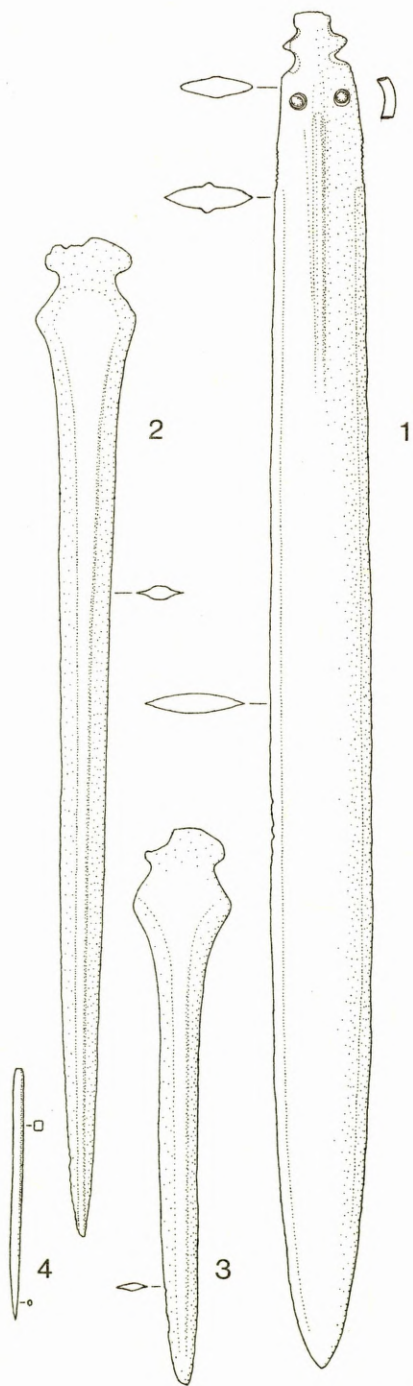


Fig 36B

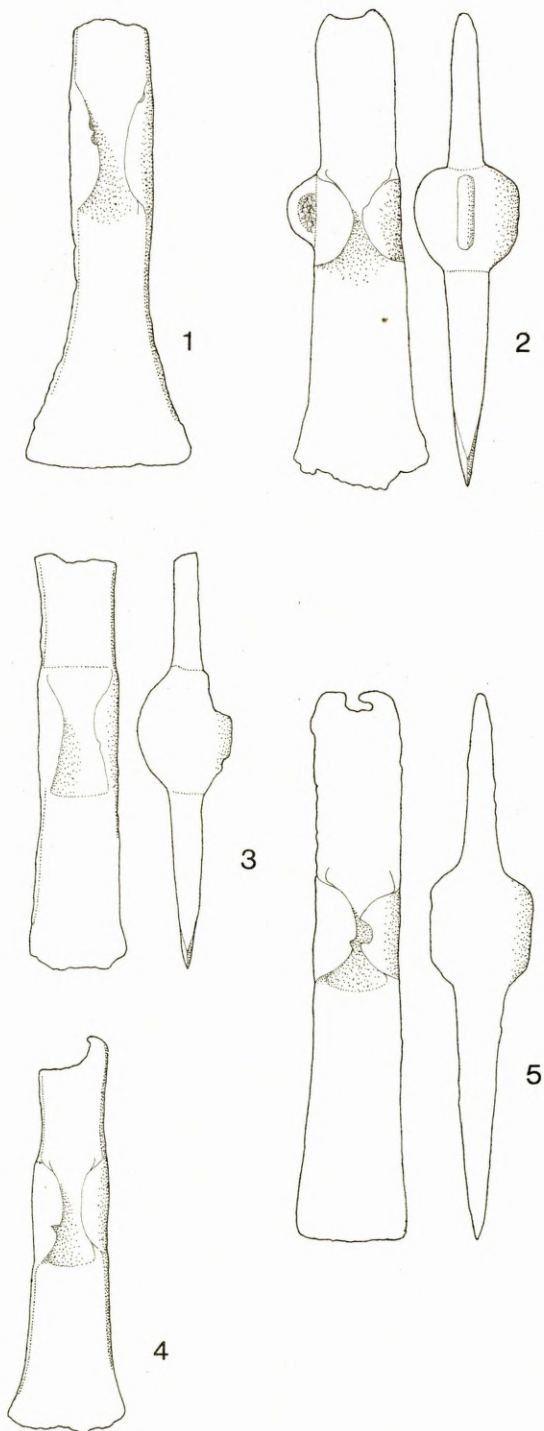


Fig. 36A. Eriswell hoard.
Fig. 36B. Erondelle hoard.

Fig 37



Fig. 37. 1. Amiens. 2. Nijmegen. 3. Seine at Paris.
4. Antwerp. 5. Daknam. 6. Flanders. 7. Cambridge.
8. Cambridge area. 9. Quy Fen. 10. Kingoldrum.
11. Nr. Annan. 12. Unprovenanced. 13. Flanders.

Fig 38

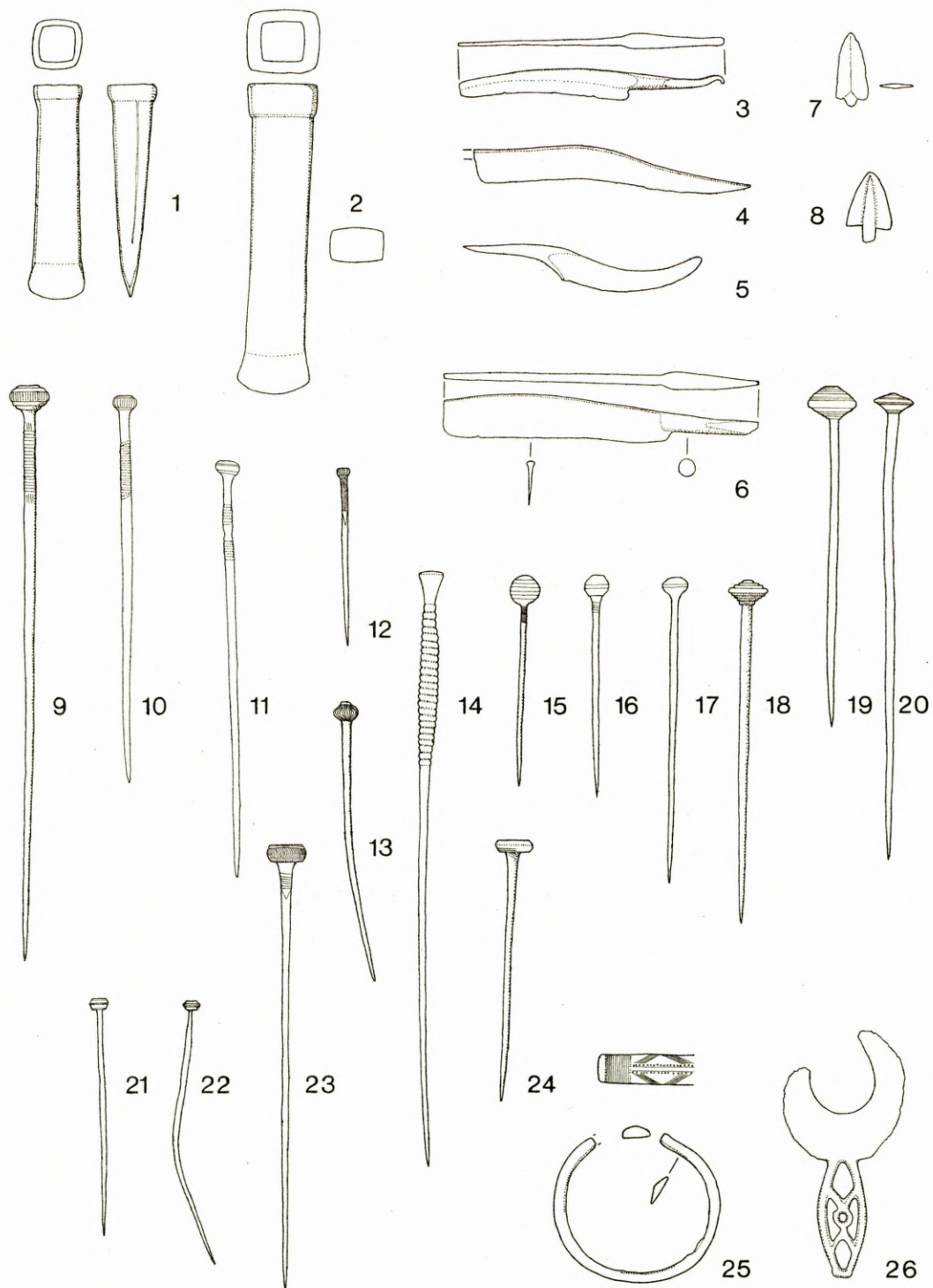


Fig. 38. 1. Burnham. 2. Rouen. 3. ?London. 4-5. Melle. 6. Scheldt at Wichelen. 7. Eriswell. 8. Zele. 9. Seine at Paris. 10-11. Scheldt at Schoonaarde. 12. Wichelen. 13. Ebble at Homington. 14. Schoonaarde. 15-17. Seine at Paris. 18. Nr. Cambridge. 19-20. Seine at Paris. 21. Thames at Old England. 22. Thames at Sion Reach. 23-24. Seine at Paris. 25. Lacroix-Saint-Ouen. 26. Seine at Paris.

Fig 39

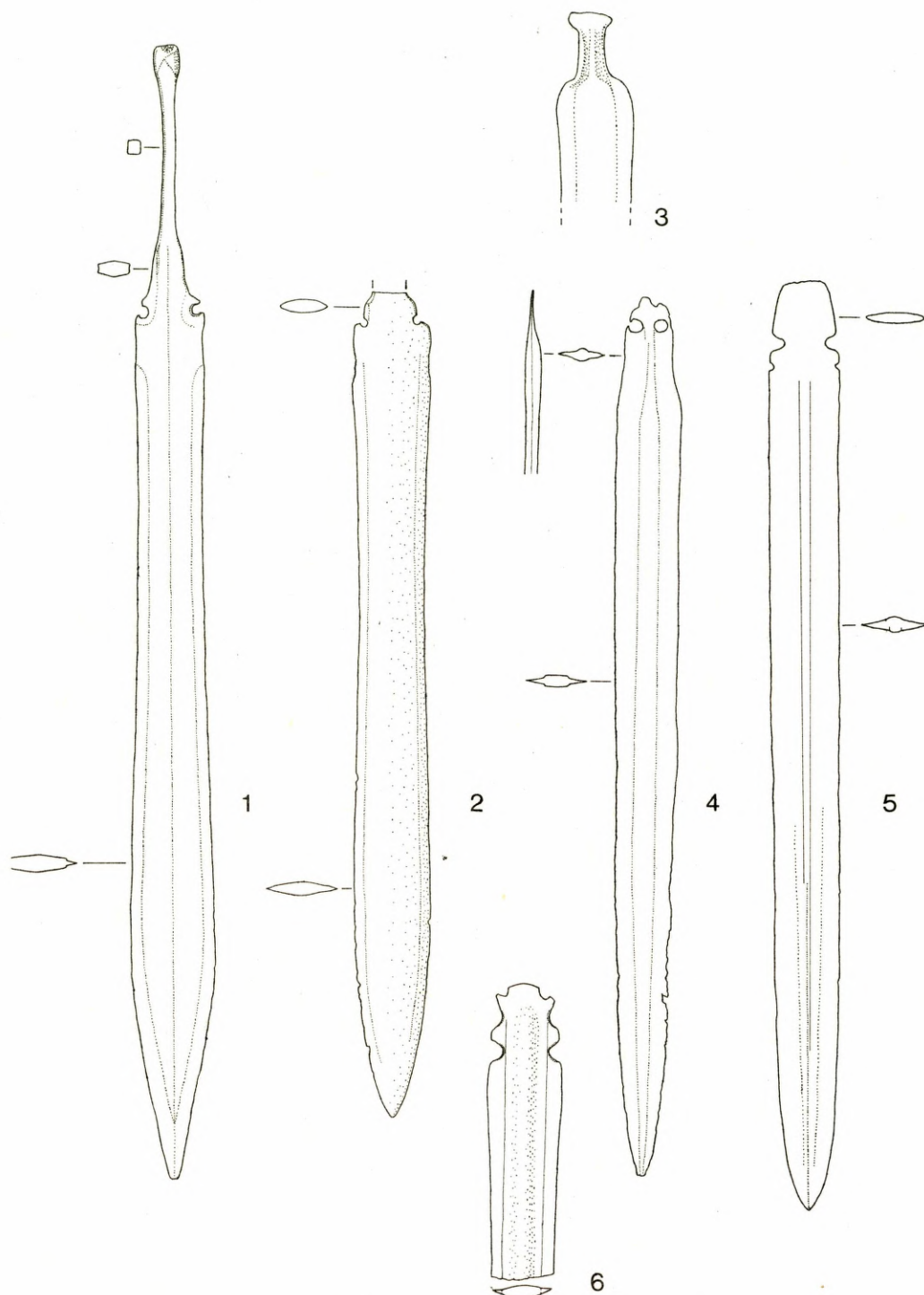


Fig. 39. 1. Seine at Villeneuve-Saint-Georges. 2. Thames at London. 3. Geraardsbergen. 4. Montières. 5. Methwold. 6. Dendermonde.

Fig 40

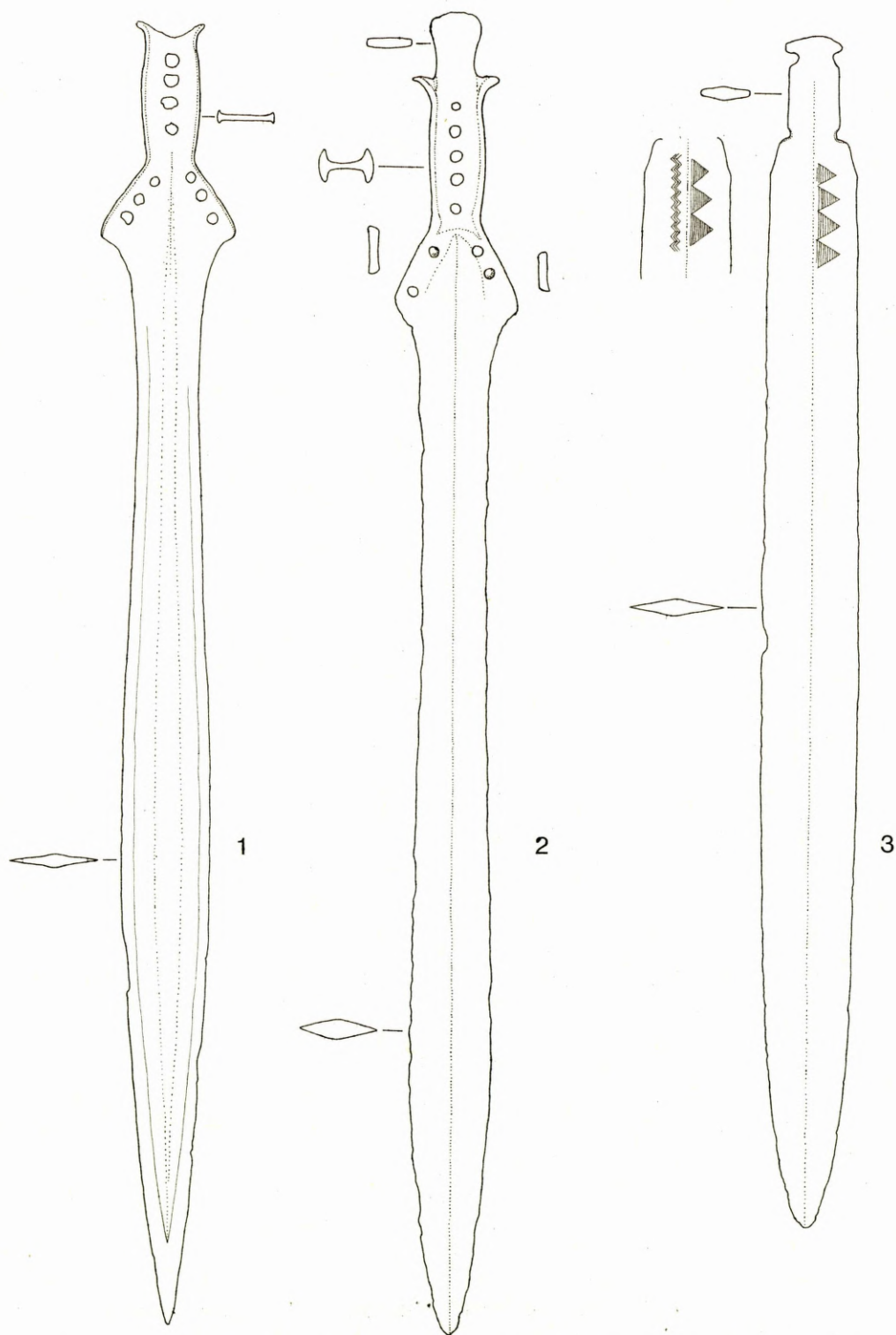


Fig. 40. 1-2. Rue Fontaine du Roi. 3. Trent nr. Nottingham.

Fig 41

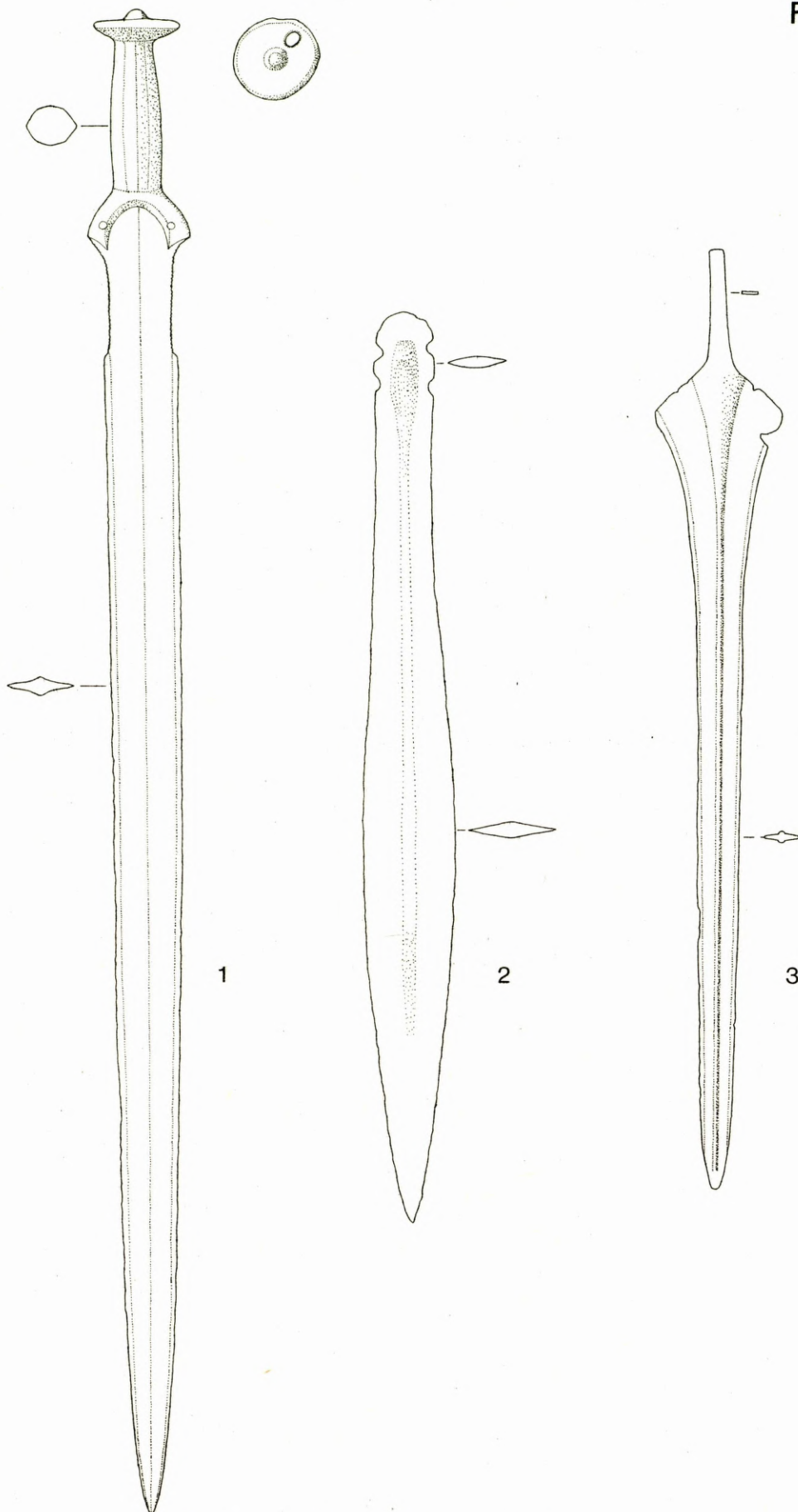


Fig. 41. 1. Oise at Boran. 2. Somme at Port-le-Grand. 3. Thames at Kingston.

Fig 42

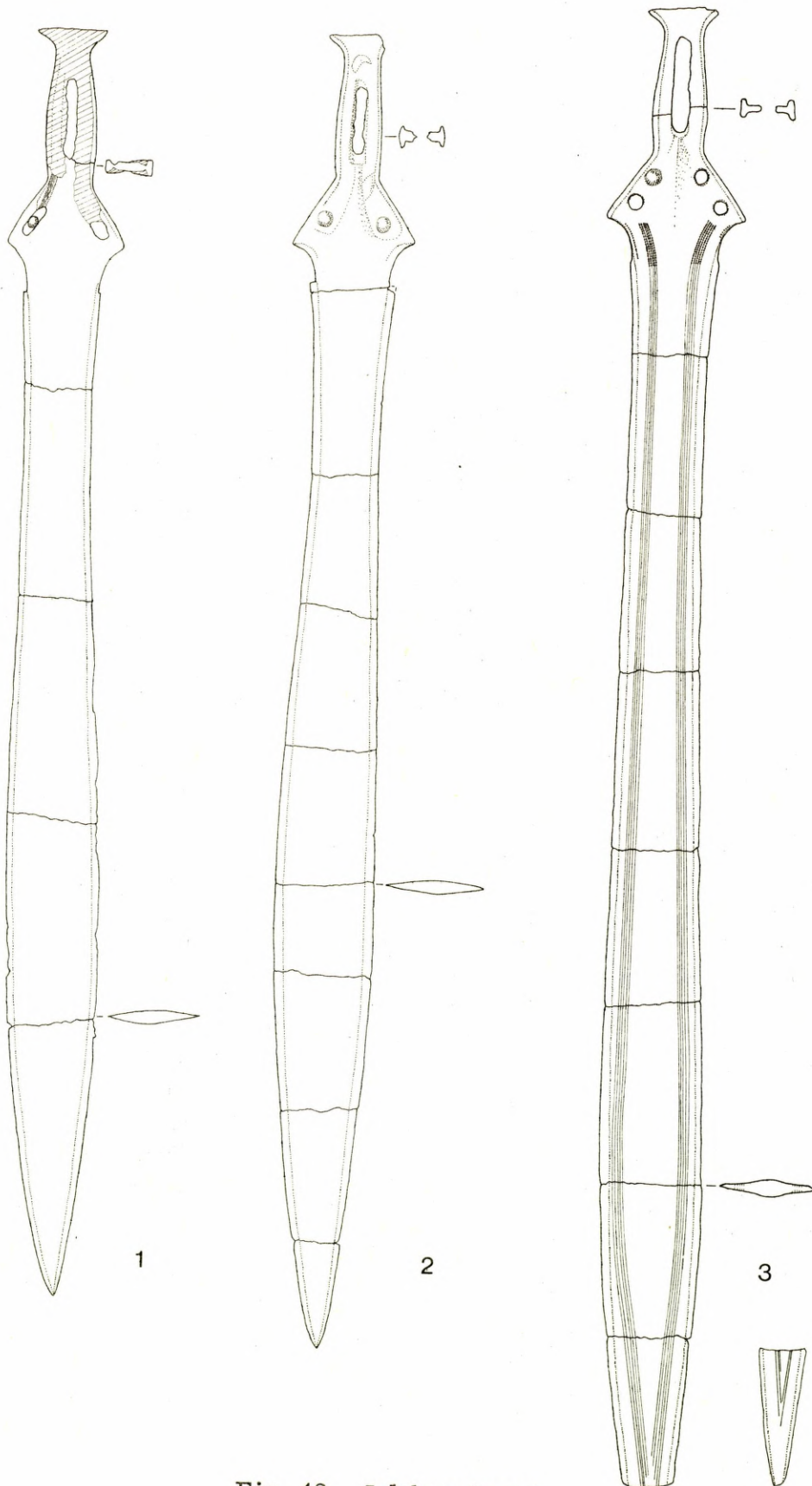


Fig. 42. Isleham hoard.

Fig 43

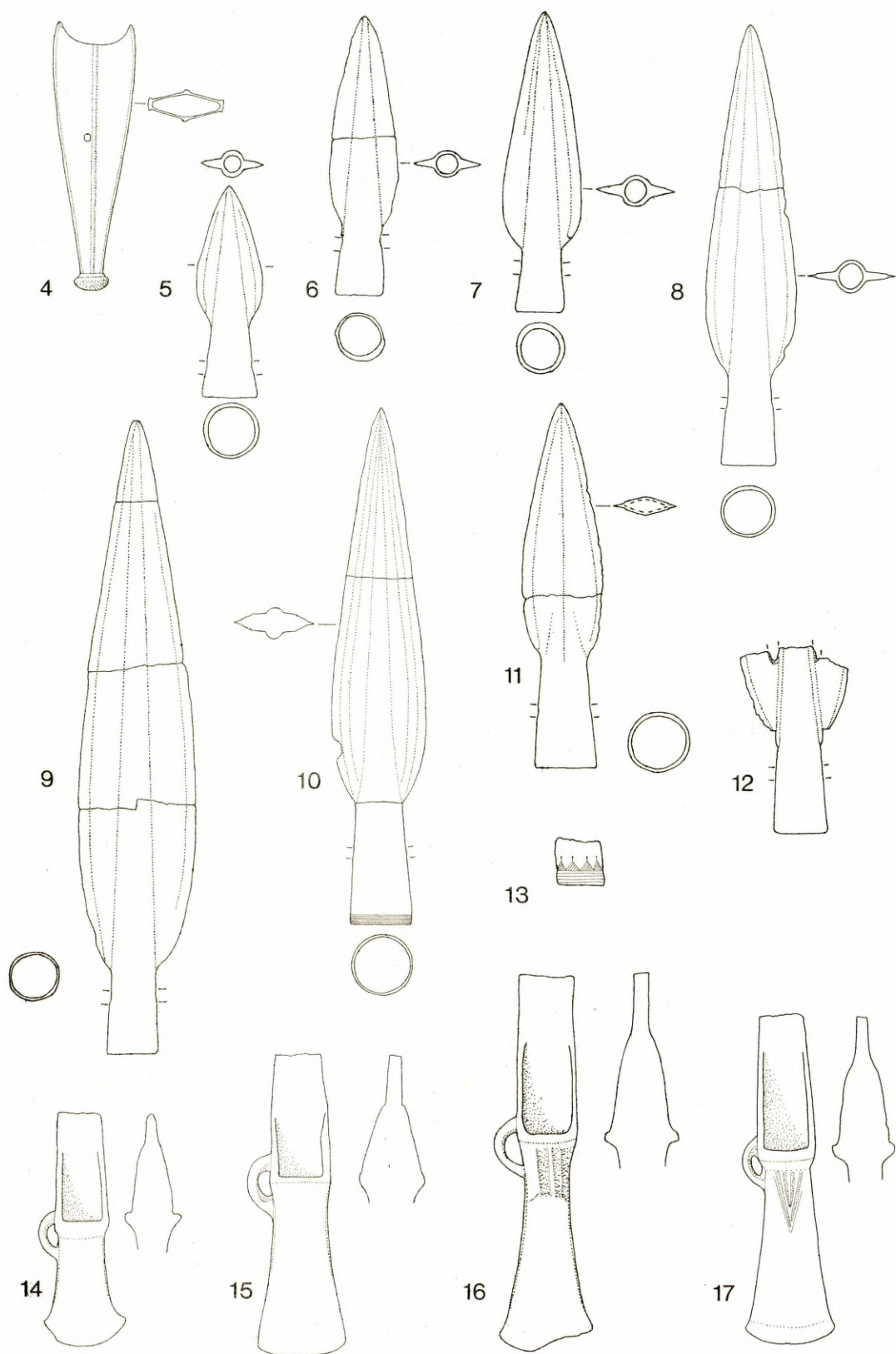


Fig. 43. Isleham hoard.

Fig 44

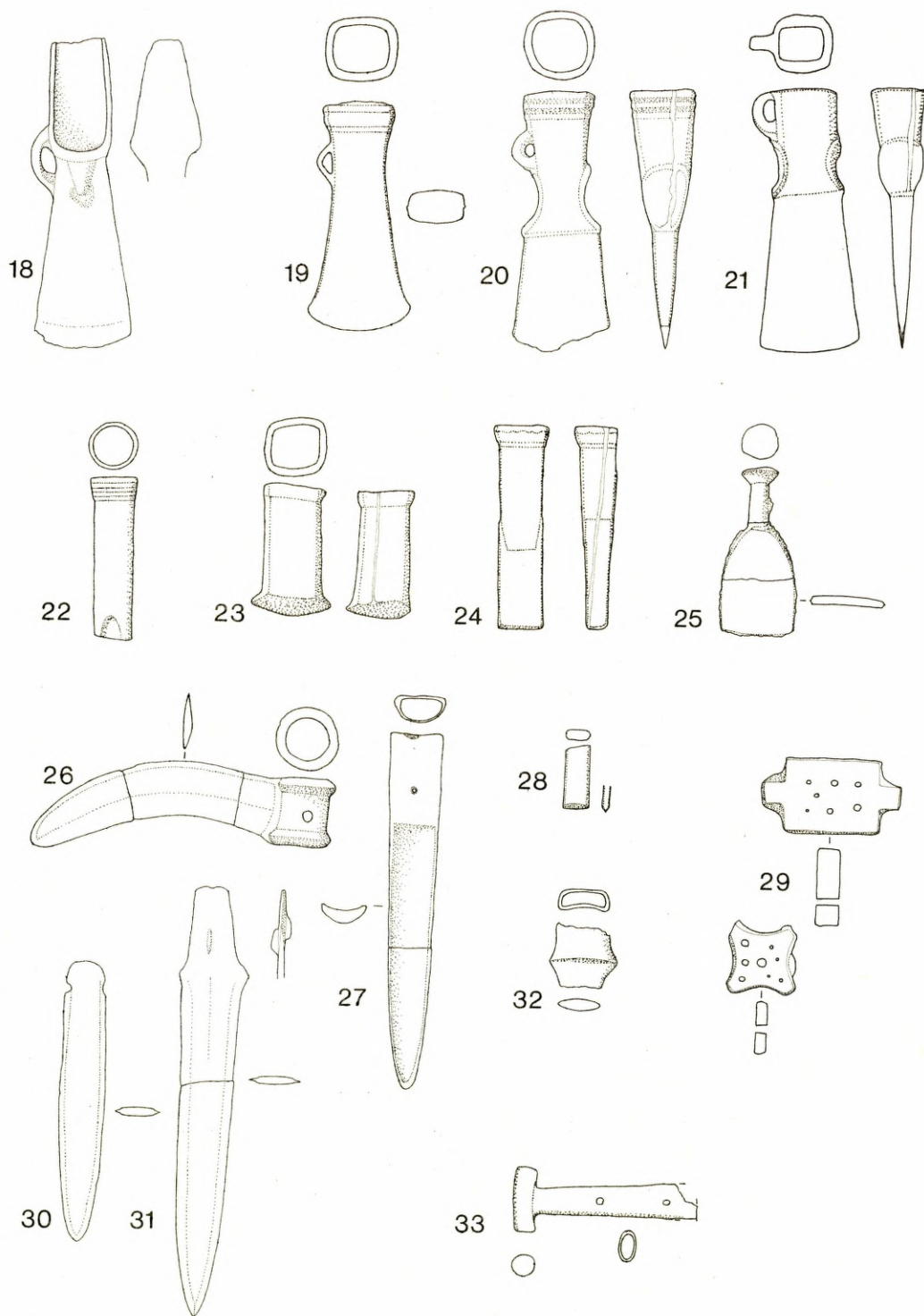


Fig. 44. Isleham hoard.

Fig 45

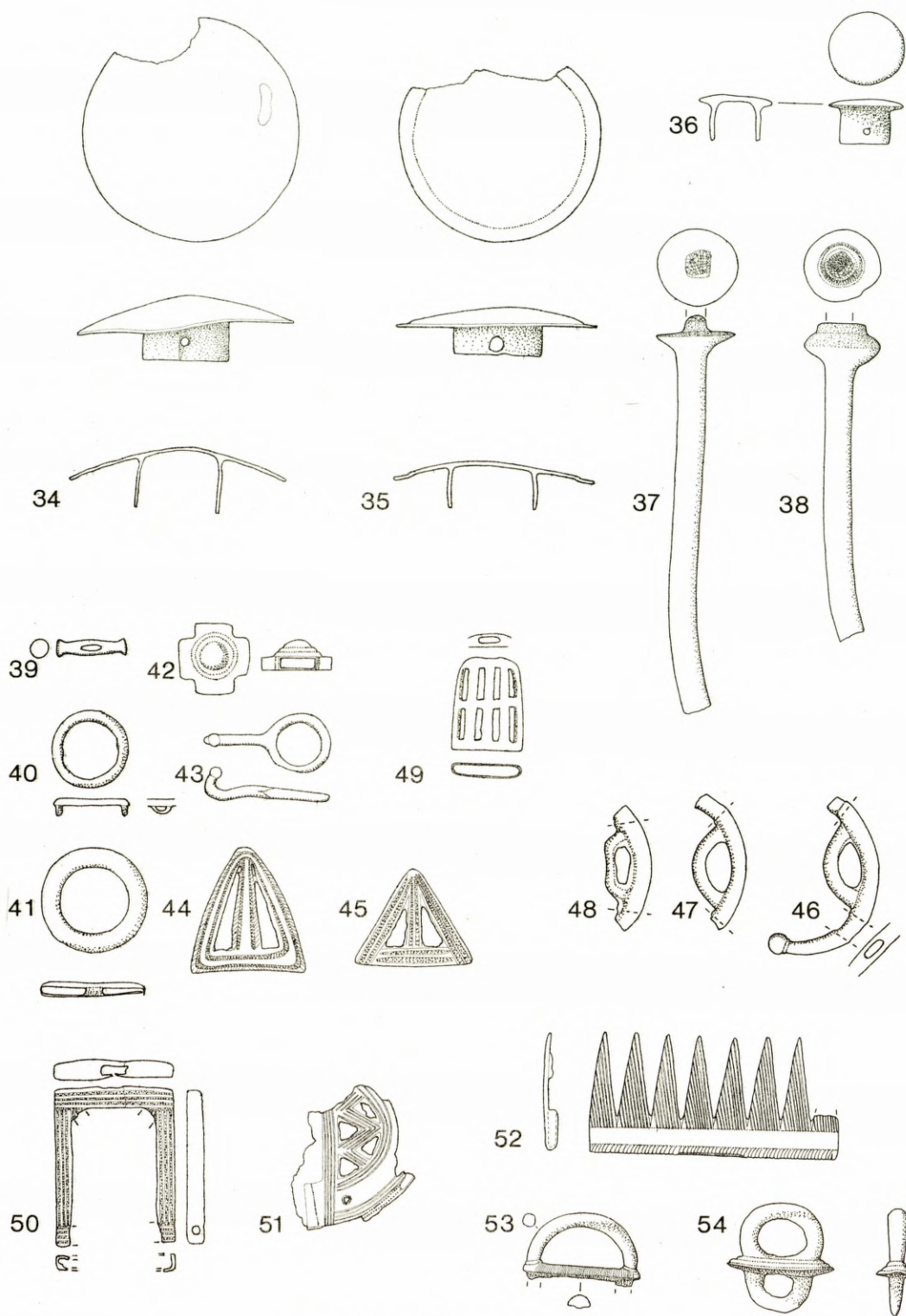


Fig. 45. Isleham hoard.

Fig 46A

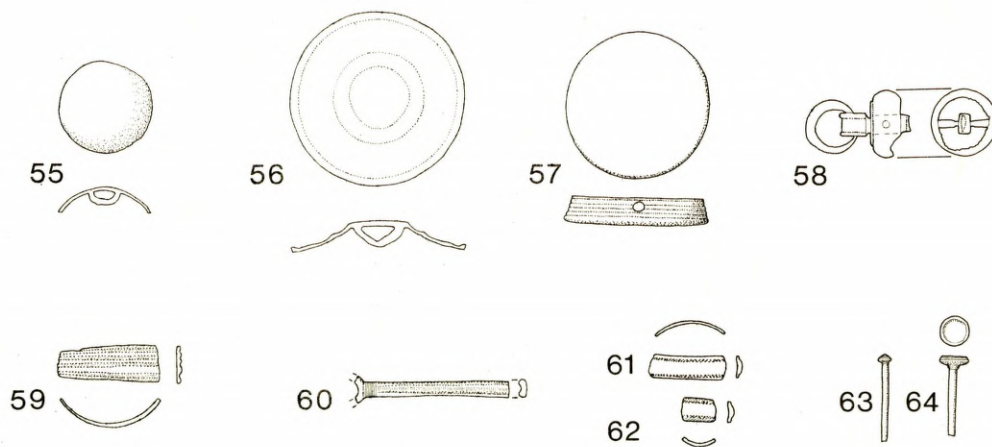


Fig 46B

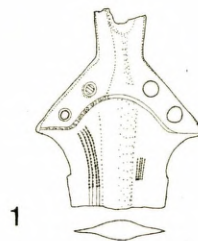


Fig 46C

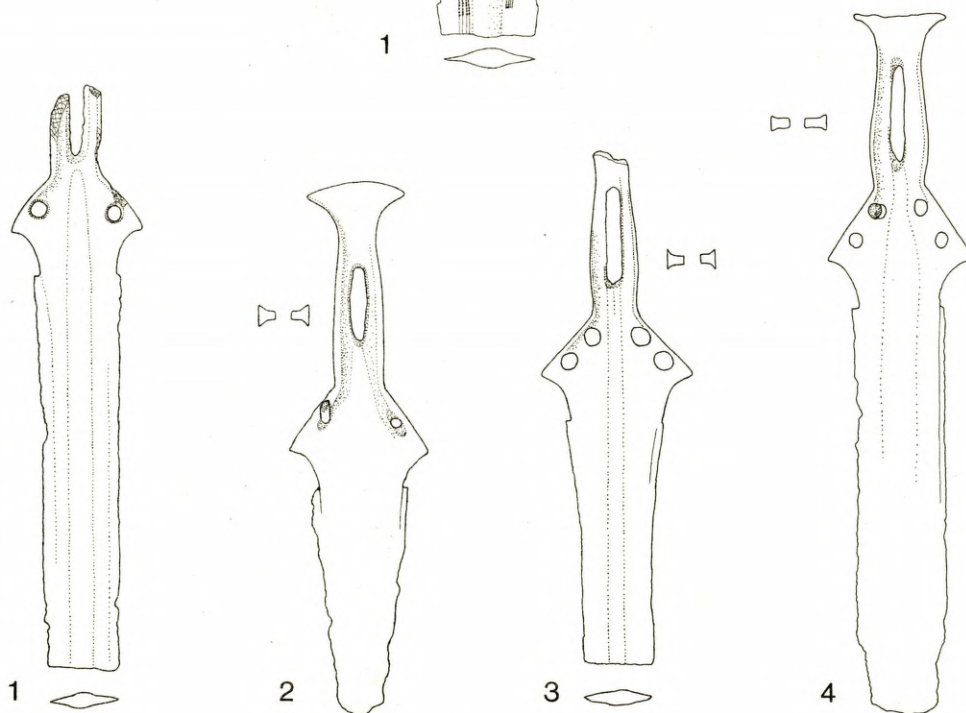


Fig. 46A. Isleham hoard.
Fig. 46B. Wicken Fen hoard.
Fig. 46C. Wilburton hoard.

Fig 47

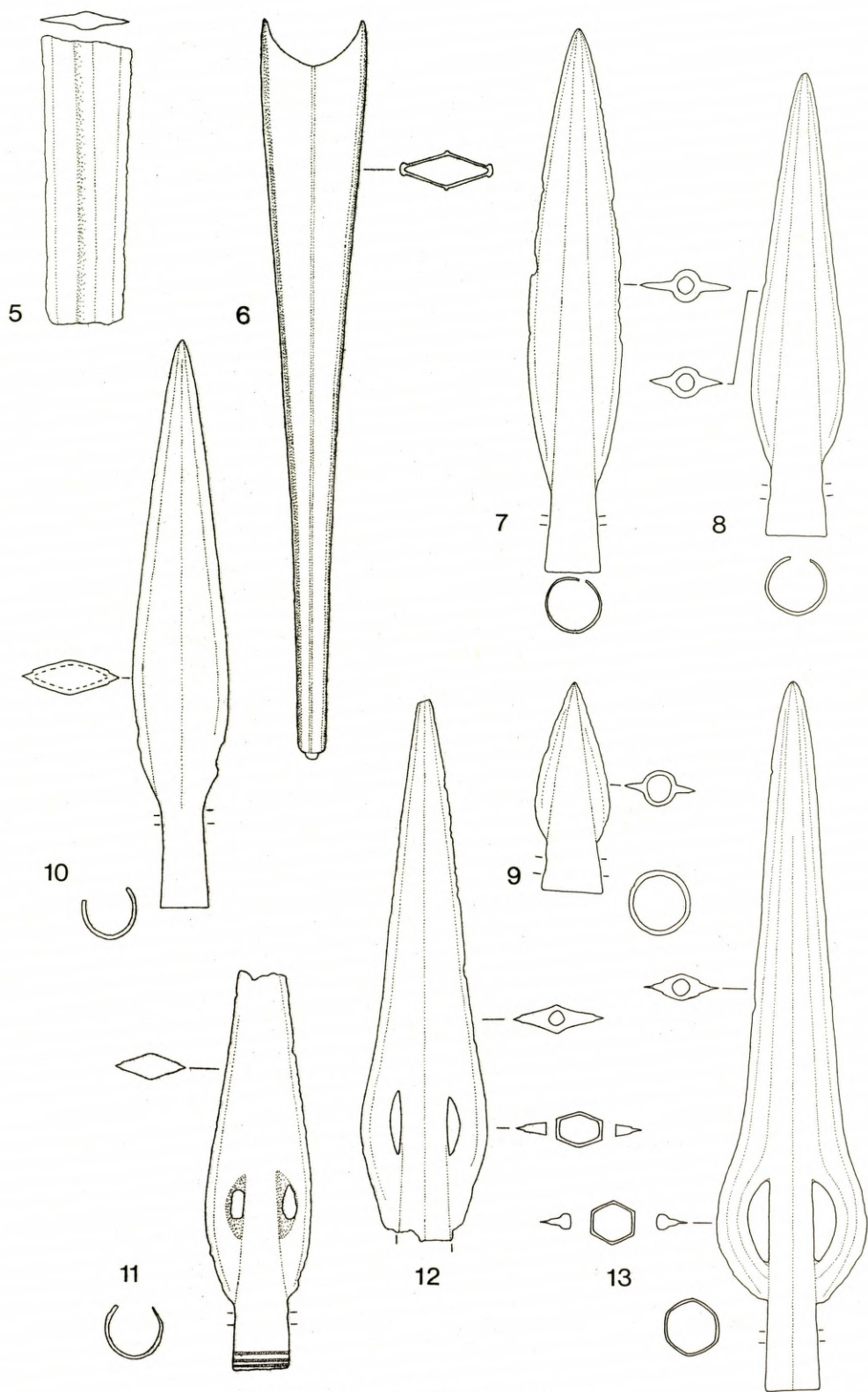


Fig. 47. Wilburton hoard.

Fig 48

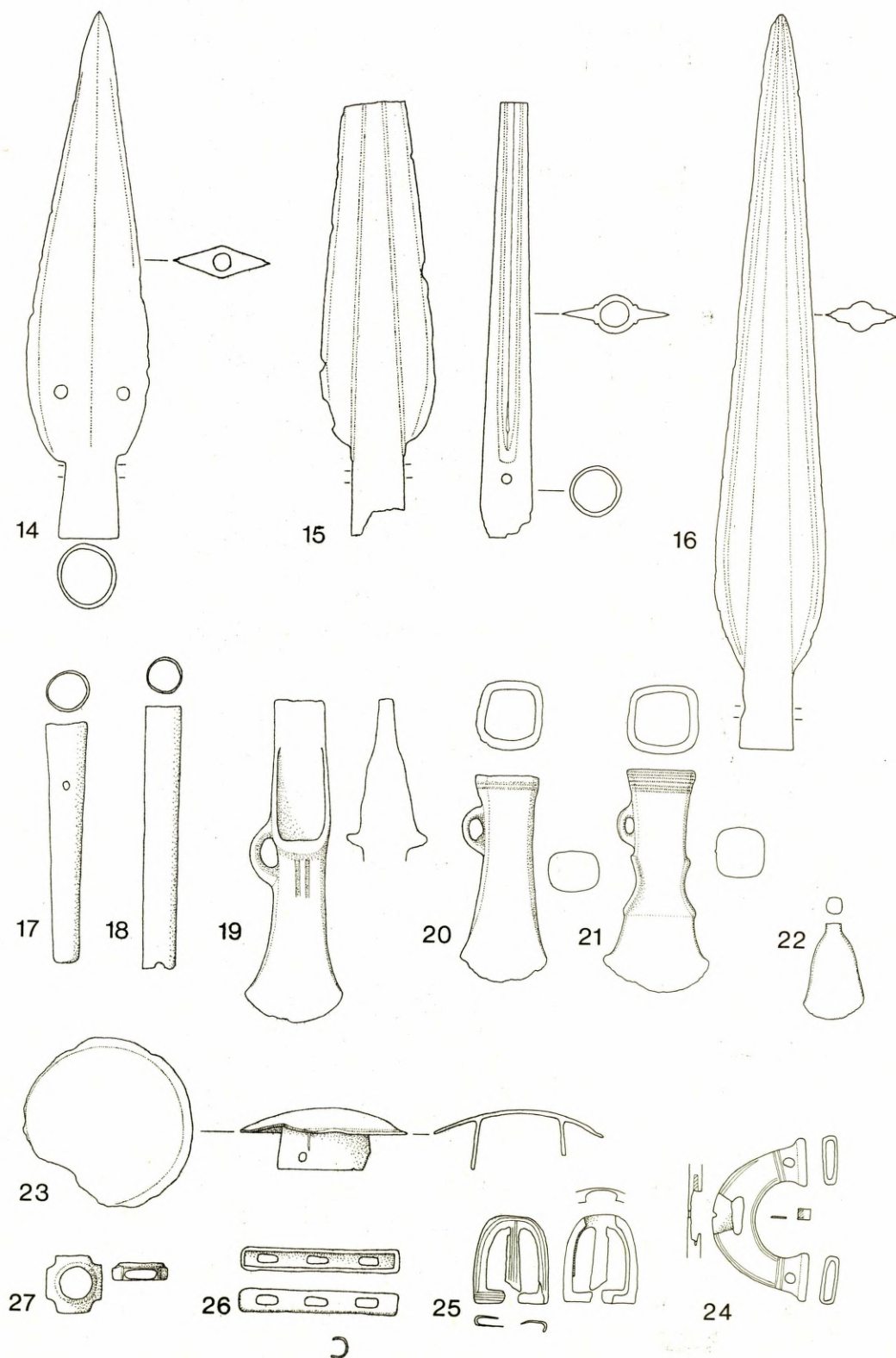


Fig. 48. Wilburton hoard.

Fig 49A

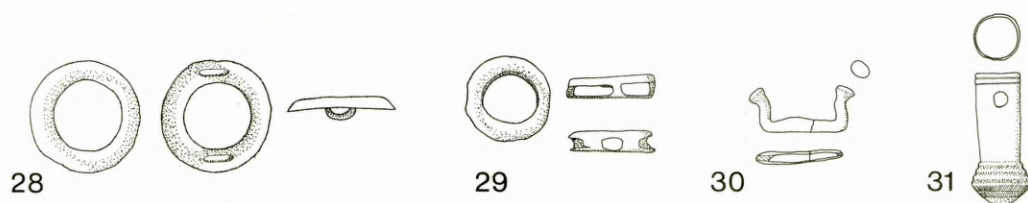


Fig 49B

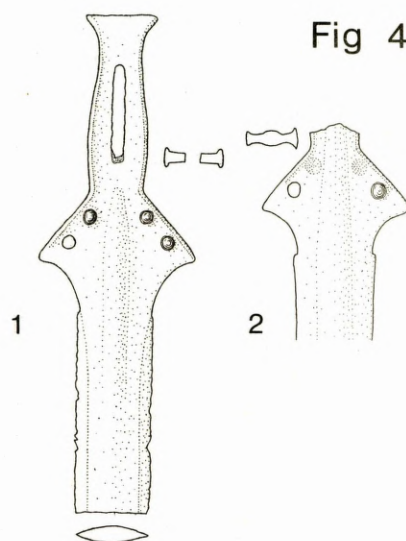


Fig 49C

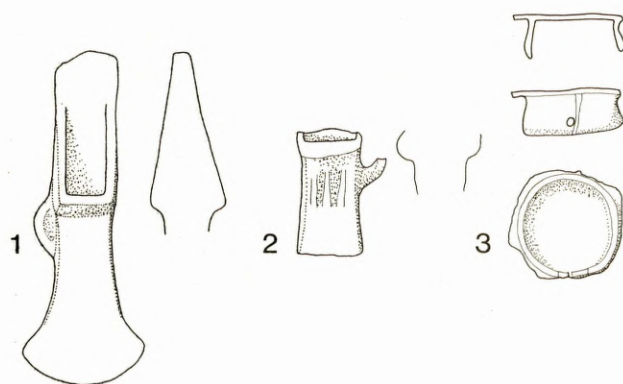


Fig. 49A. Wilburton hoard.

Fig. 49B. Andover hoard.

Fig. 49C. Canteleu hoard.

Fig 50

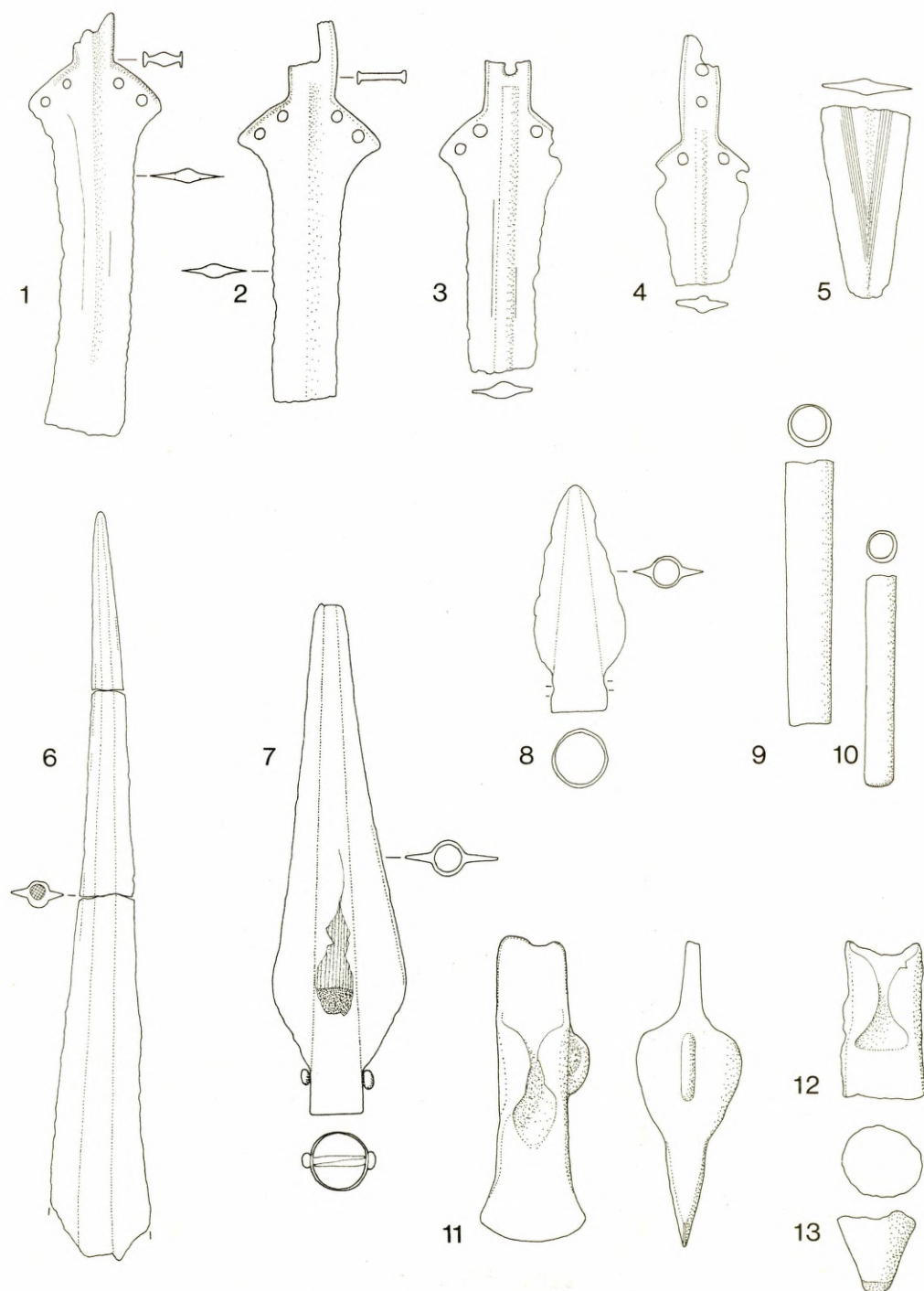


Fig. 50. Seine at Paris hoard.

Fig 51

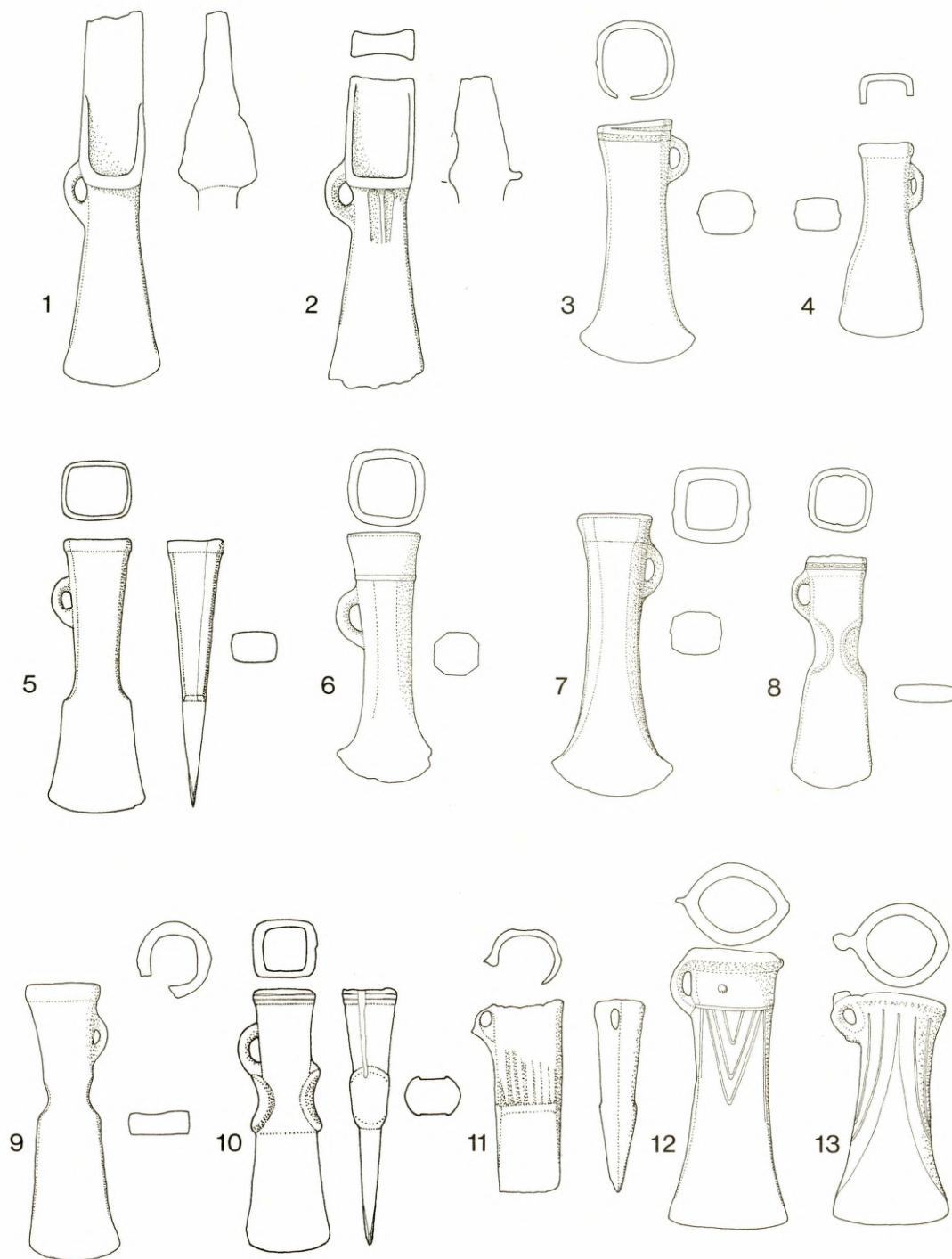


Fig. 51. 1. Unprovenanced. 2. Clairoux. 3. Undley.
4. Swaffham. 5. Faubourg de Ham. 6. Littleport.
7. Lakenheath. 8. Unprovenanced. 9. Abbeville area.
10. Amiens area. 11. Carse Loch. 12-13. Thames
at London.

Fig 52

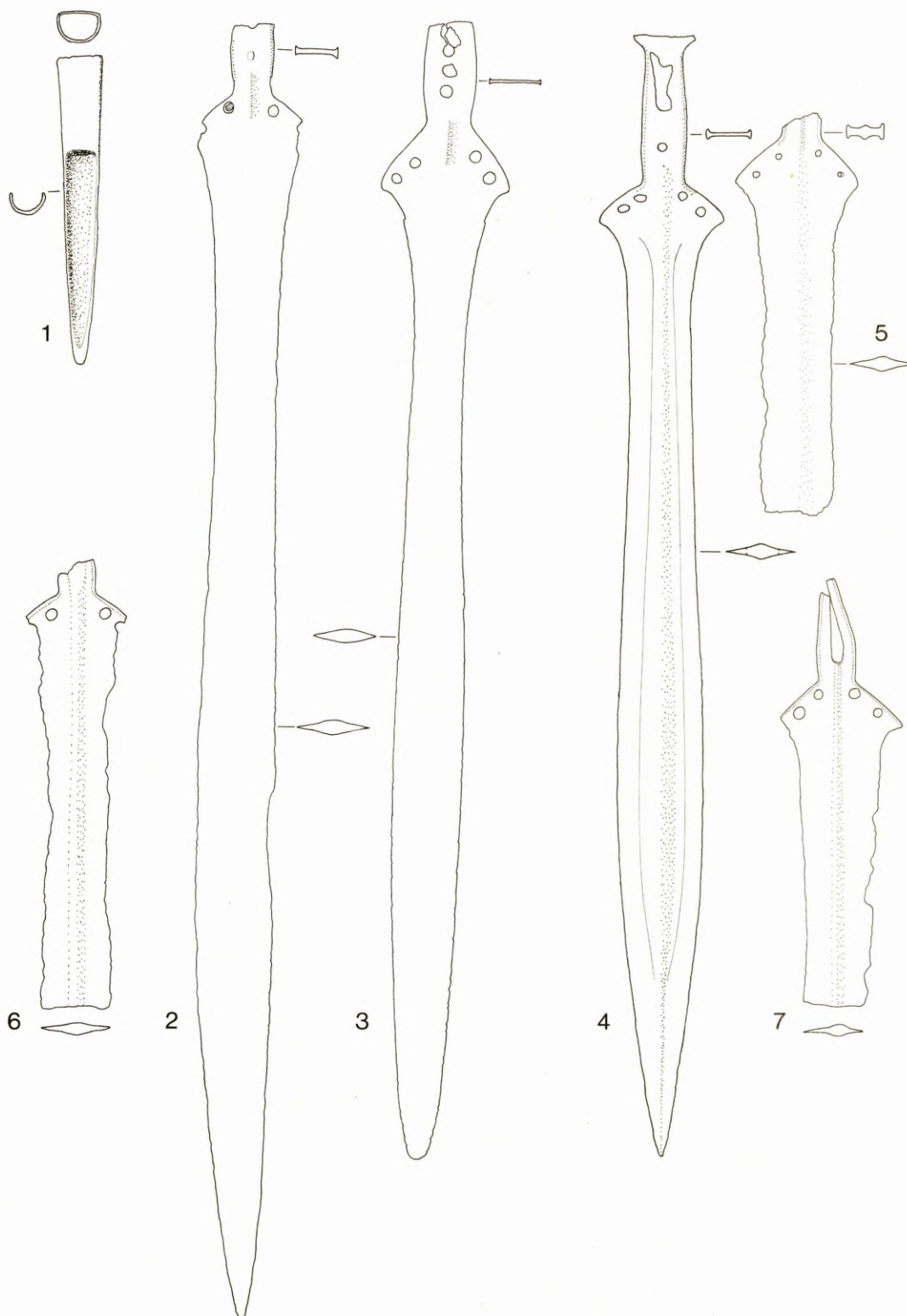


Fig. 52. 1. Thames, ?Mortlake.
2-5. Seine at Paris. 6-7. Seine at
Charenton.

Fig 53



Fig. 53. 1-2. Seine
at Paris. 3. Albert.
4. Liercourt.

Fig 54

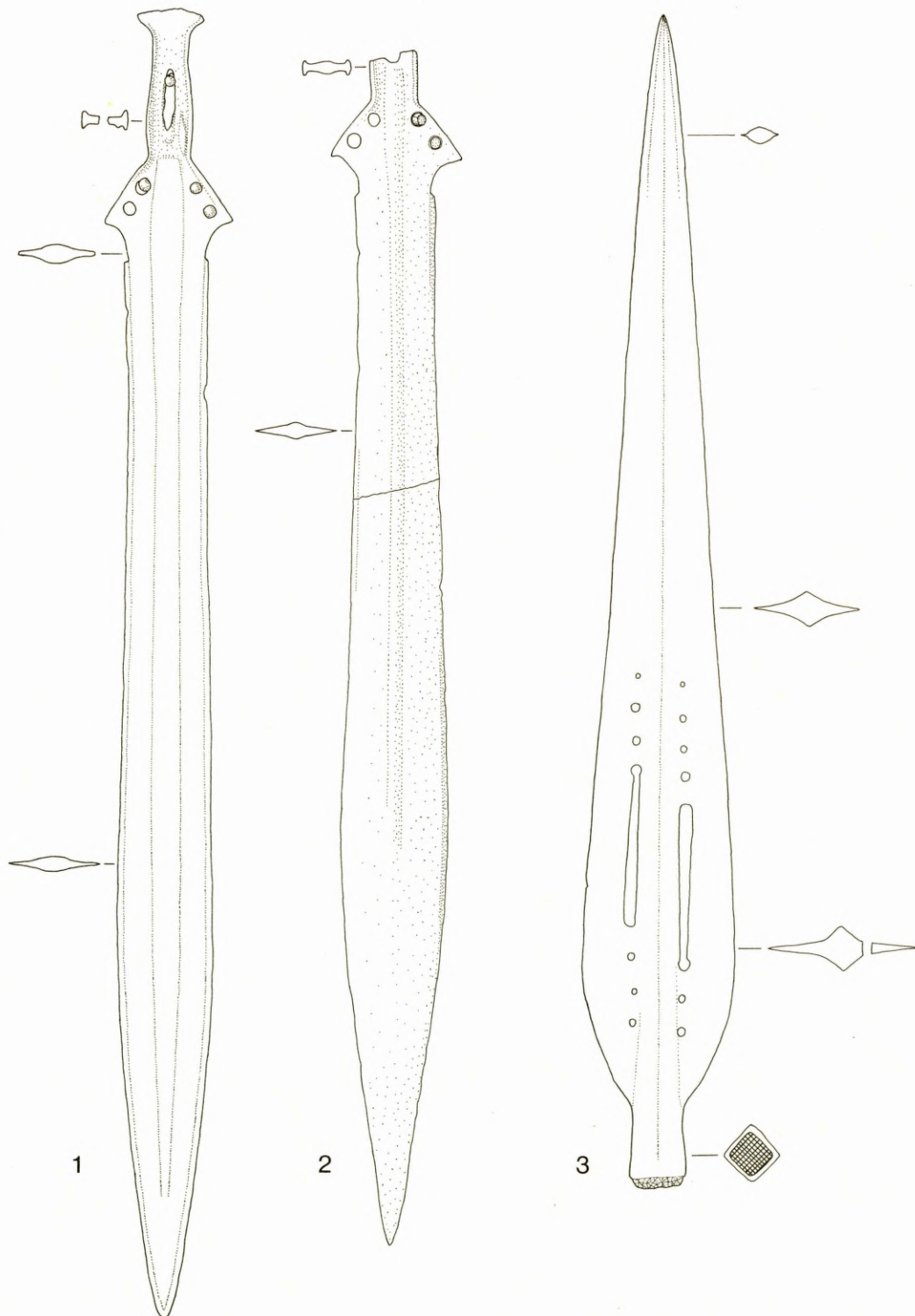


Fig. 54. 1. Aldreth. 2. Thames at Teddington.
3. Seine at Pont D'Austerlitz.

Fig 55A

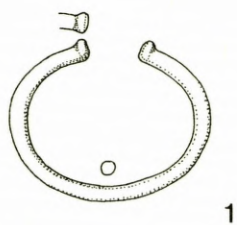


Fig 55C

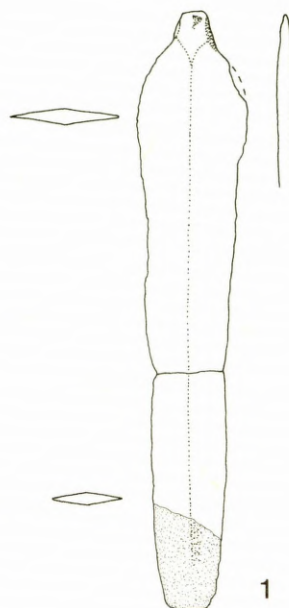


Fig 55B

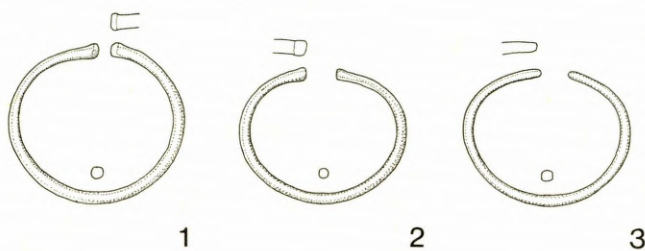


Fig 55D

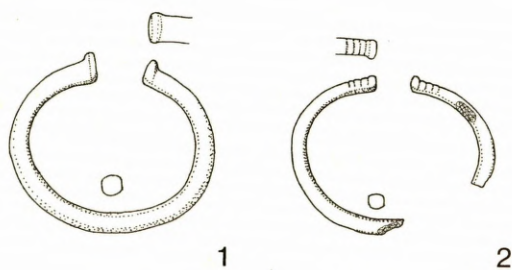


Fig 55E

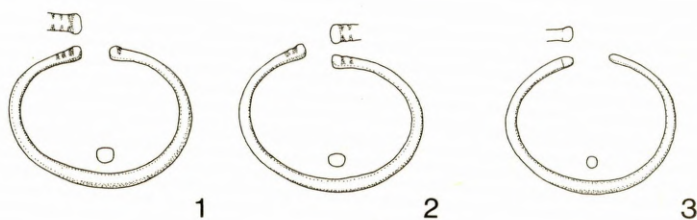


Fig. 55A. Braes of Gight hoard.

Fig. 55B. Balmashanner hoard.

Fig. 55C. Dalduff hoard.

Fig. 55D. Auchtertyre hoard.

Fig. 55E. Covesea.

Fig 56

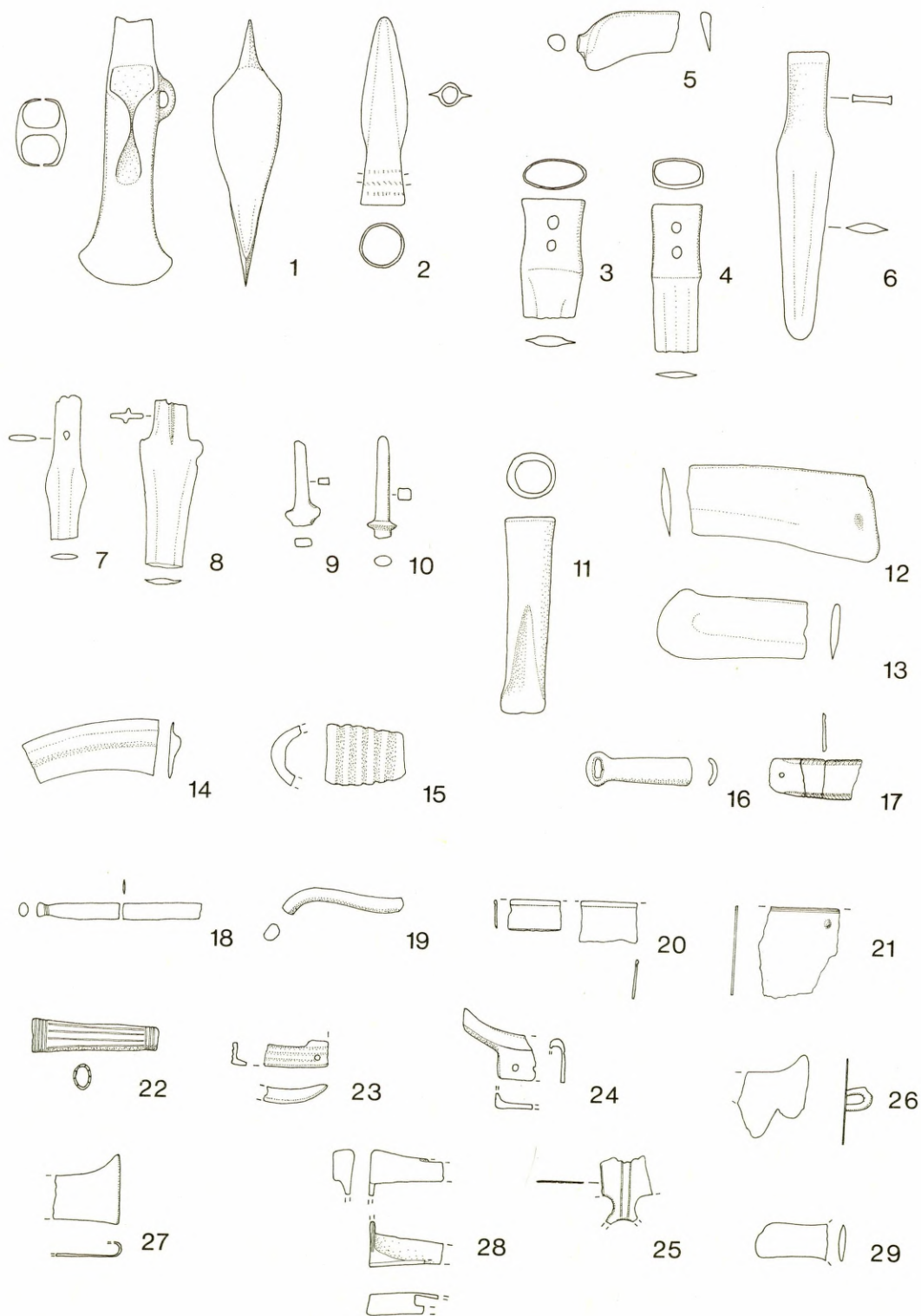


Fig. 56. Grays Thurrock hoard.

Fig 57A

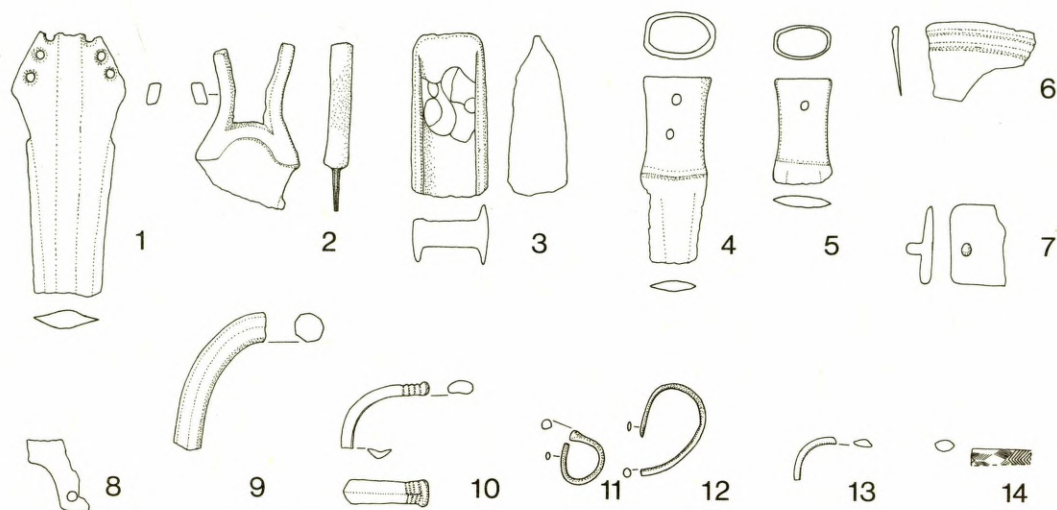


Fig 57B

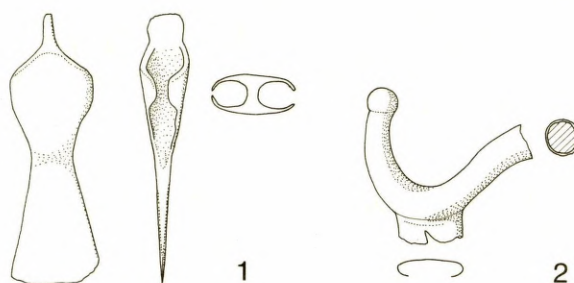


Fig 57C

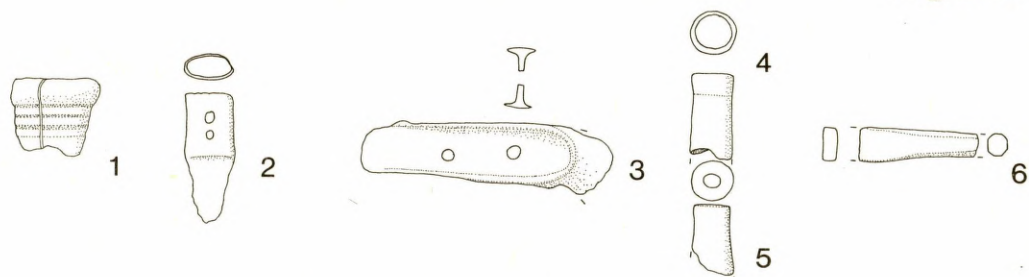


Fig. 57A. Leigh hoard.
Fig. 57B. Shoebury hoard.
Fig. 57C. Southchurch hoard.

Fig 58A

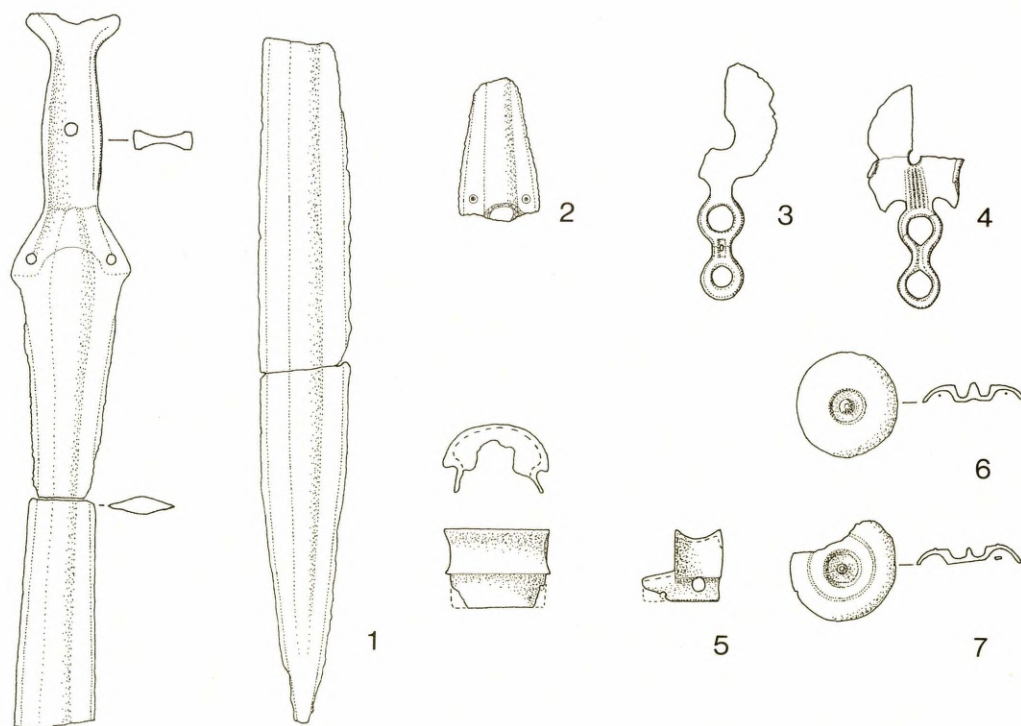


Fig 58B

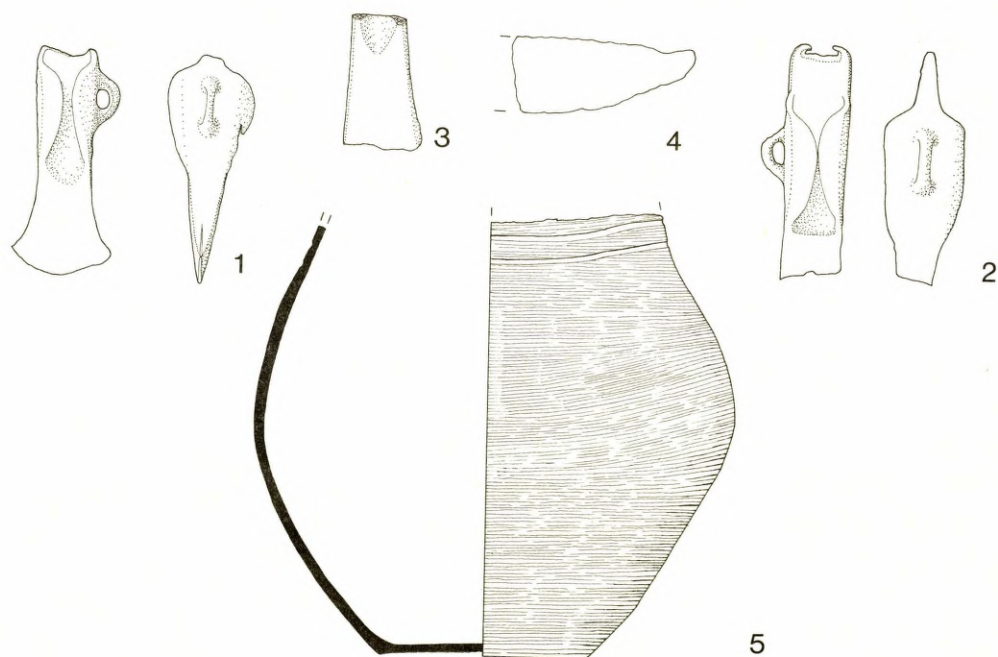


Fig. 58A. Watford hoard.

Fig. 58B. Aylesford hoard.

Fig 59

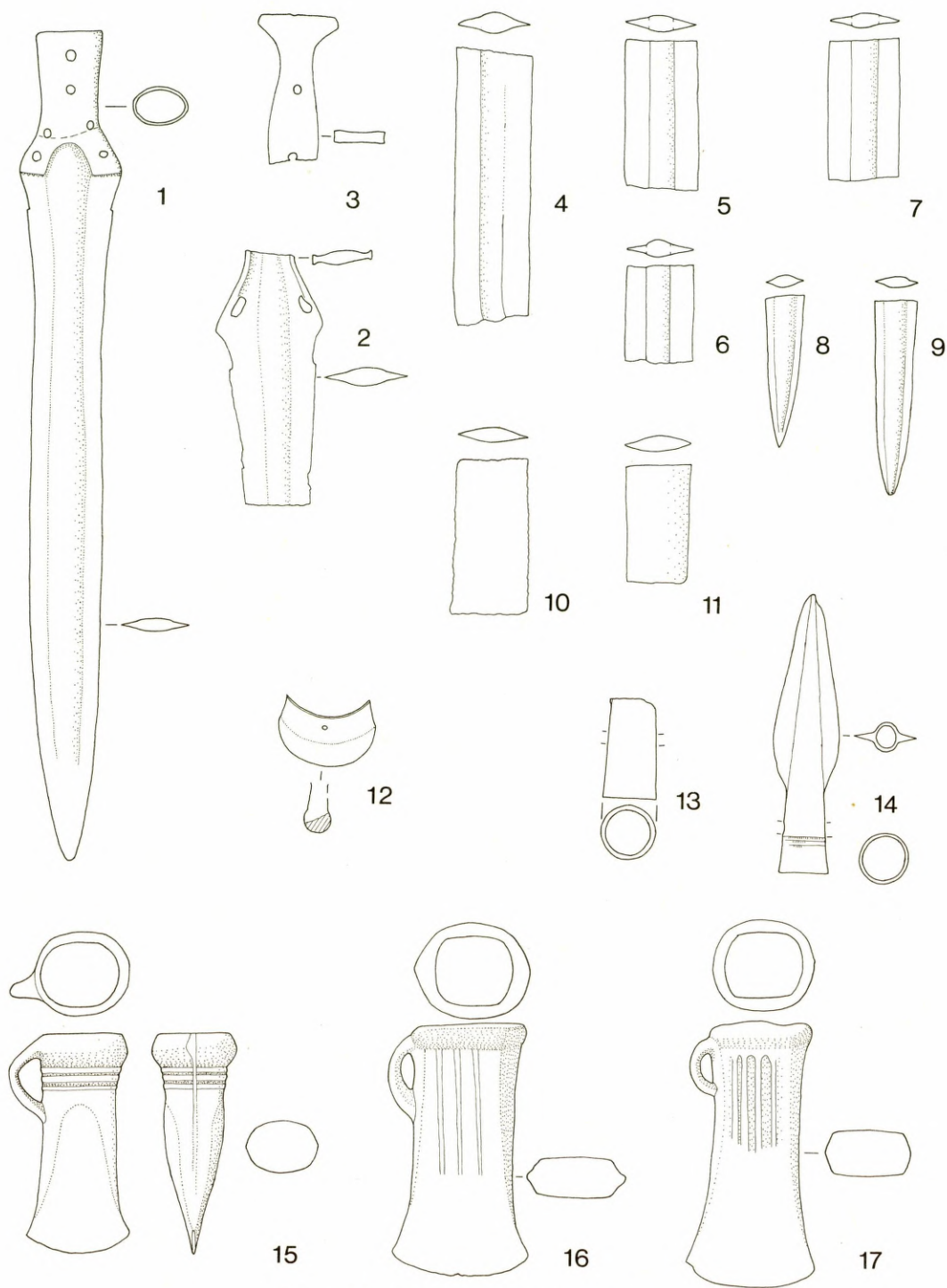


Fig. 59. Minnis Bay hoard.

Fig 60

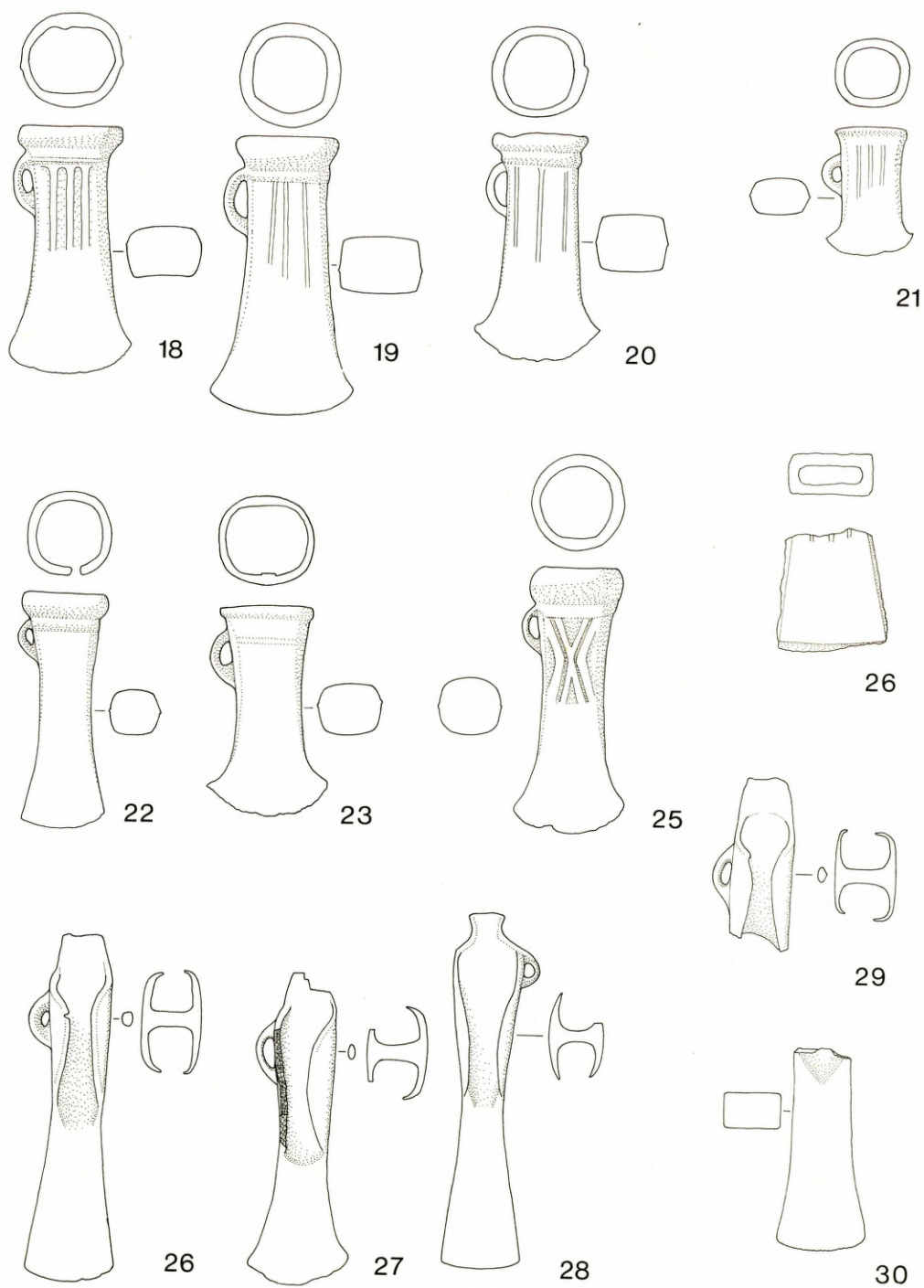


Fig. 60. Minnis Bay hoard.

Fig 61

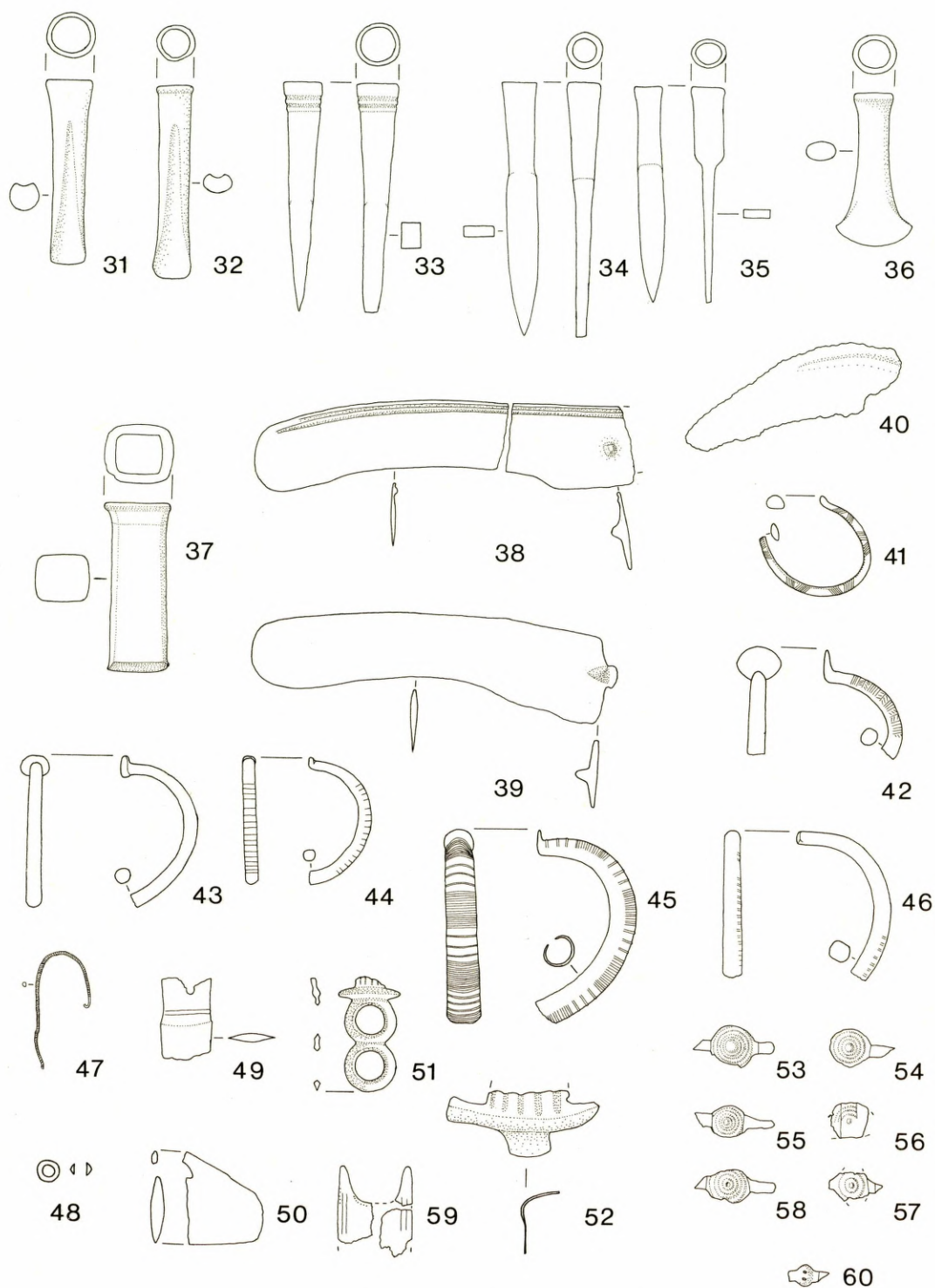


Fig. 61. Minnis Bay hoard.

Fig 62A

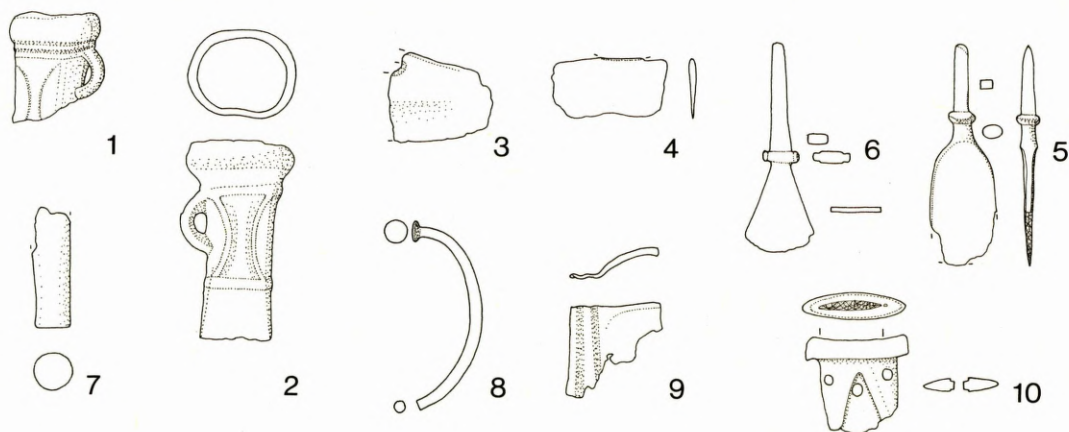


Fig 62B

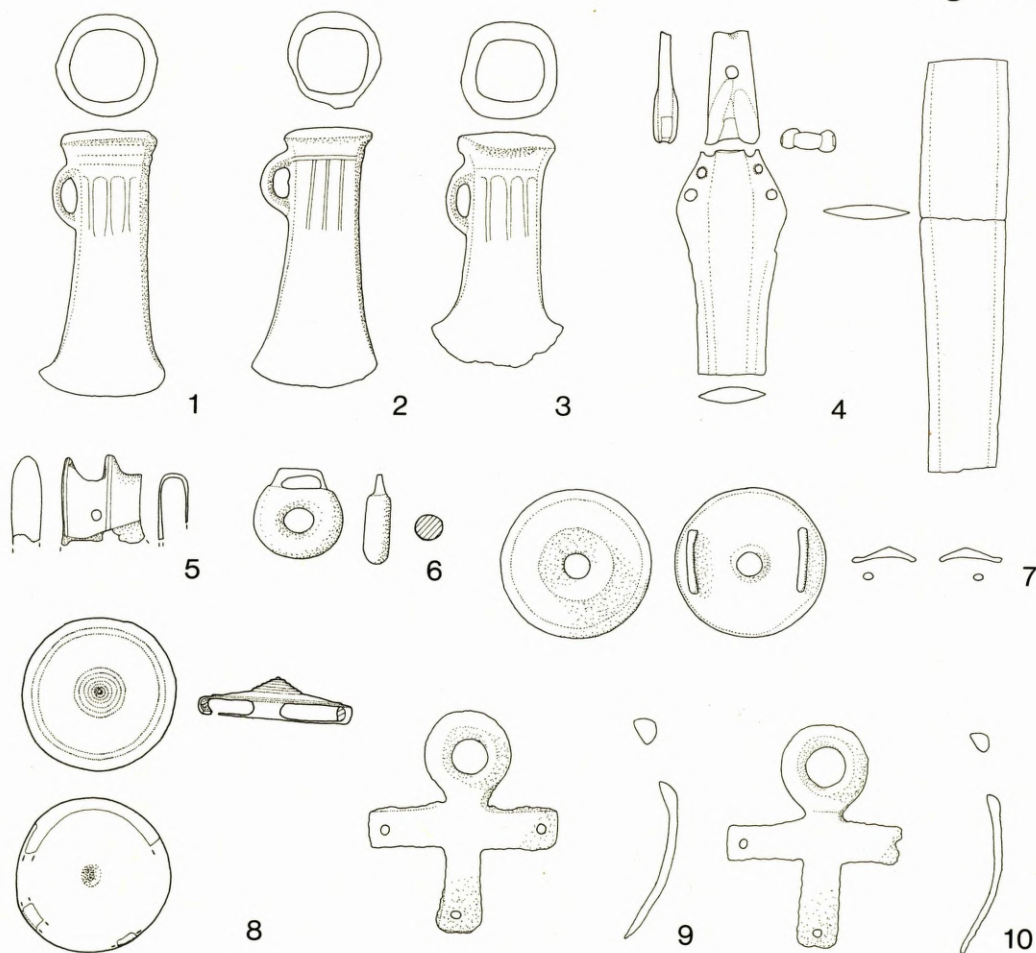


Fig. 62A. Stourmouth hoard.

Fig. 62B. Welby hoard.

Fig 63A

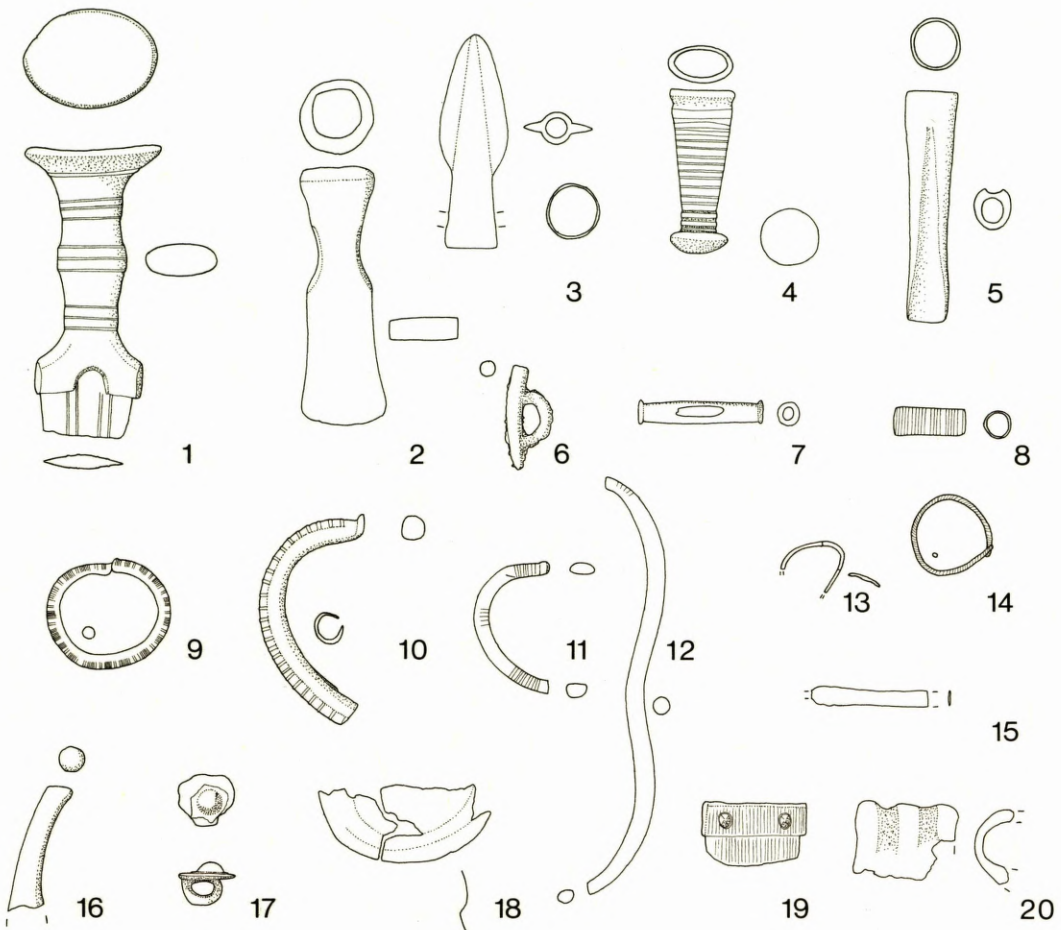


Fig 63B

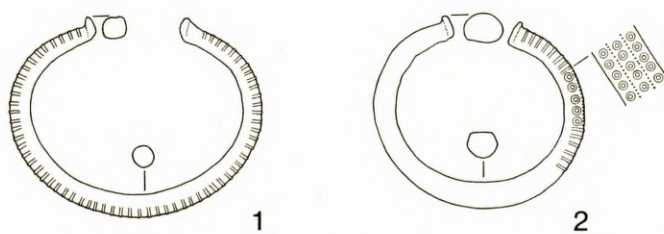


Fig. 63A. Deville hoard.
Fig. 63B. Pantin hoard.

Fig 64

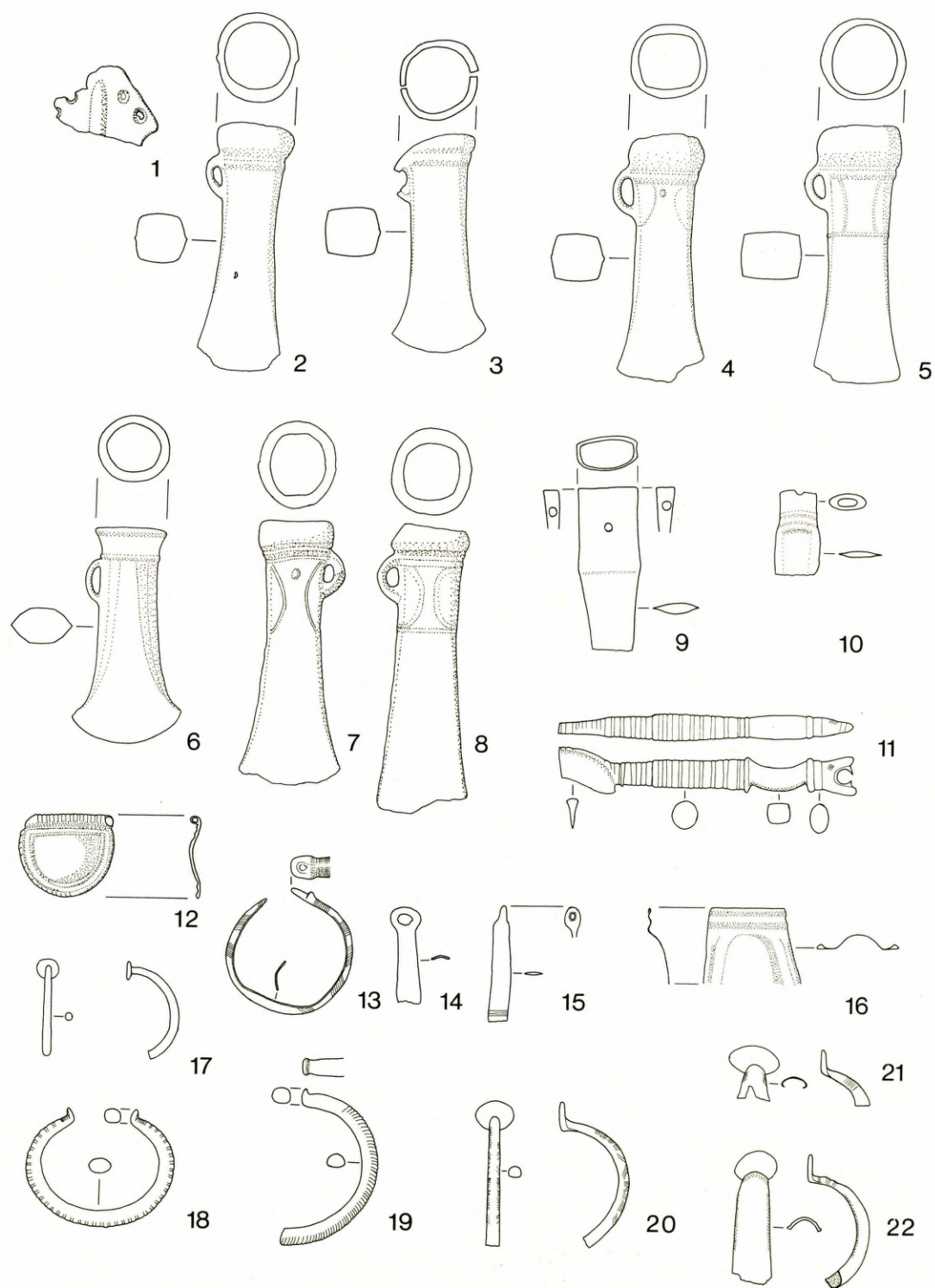


Fig. 64. Dreuil hoard.

Fig 65A

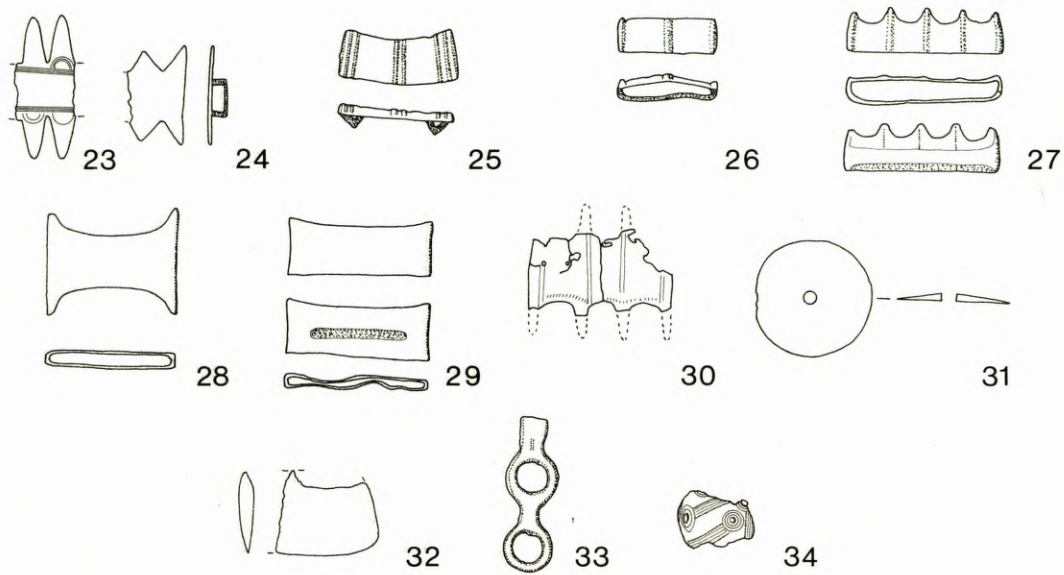


Fig 65B

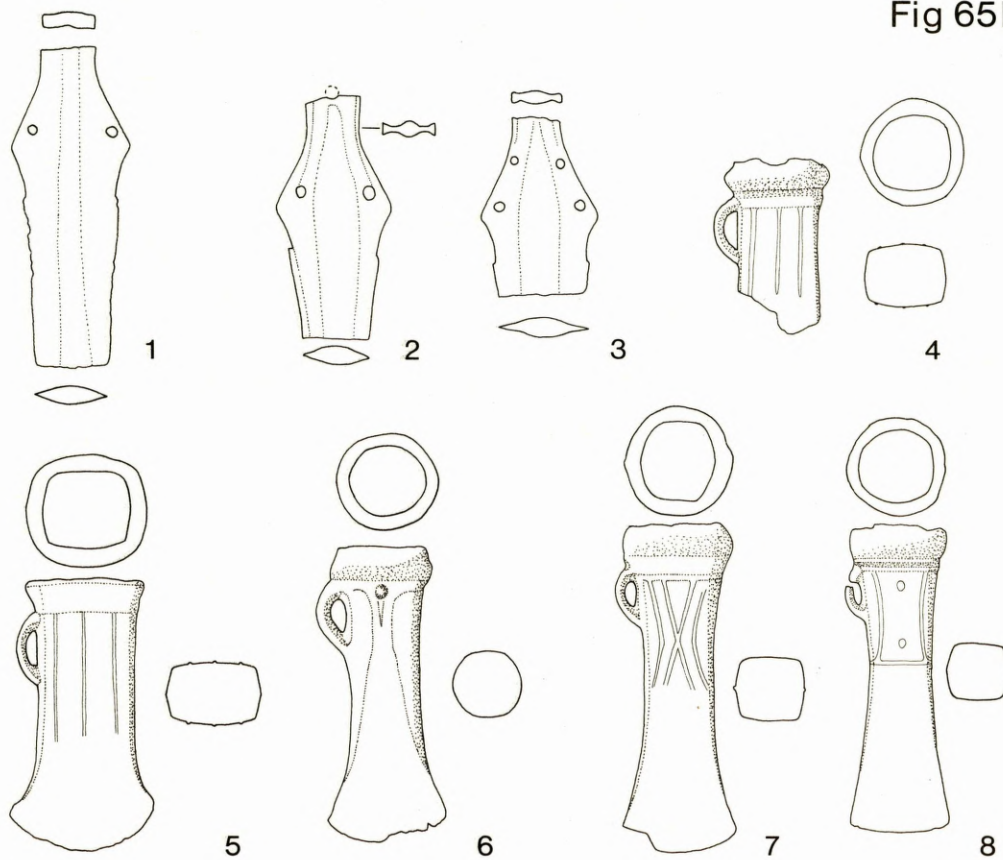


Fig. 65A. Dreuil hoard.
Fig. 65B. Plainseau hoard.

Fig 66

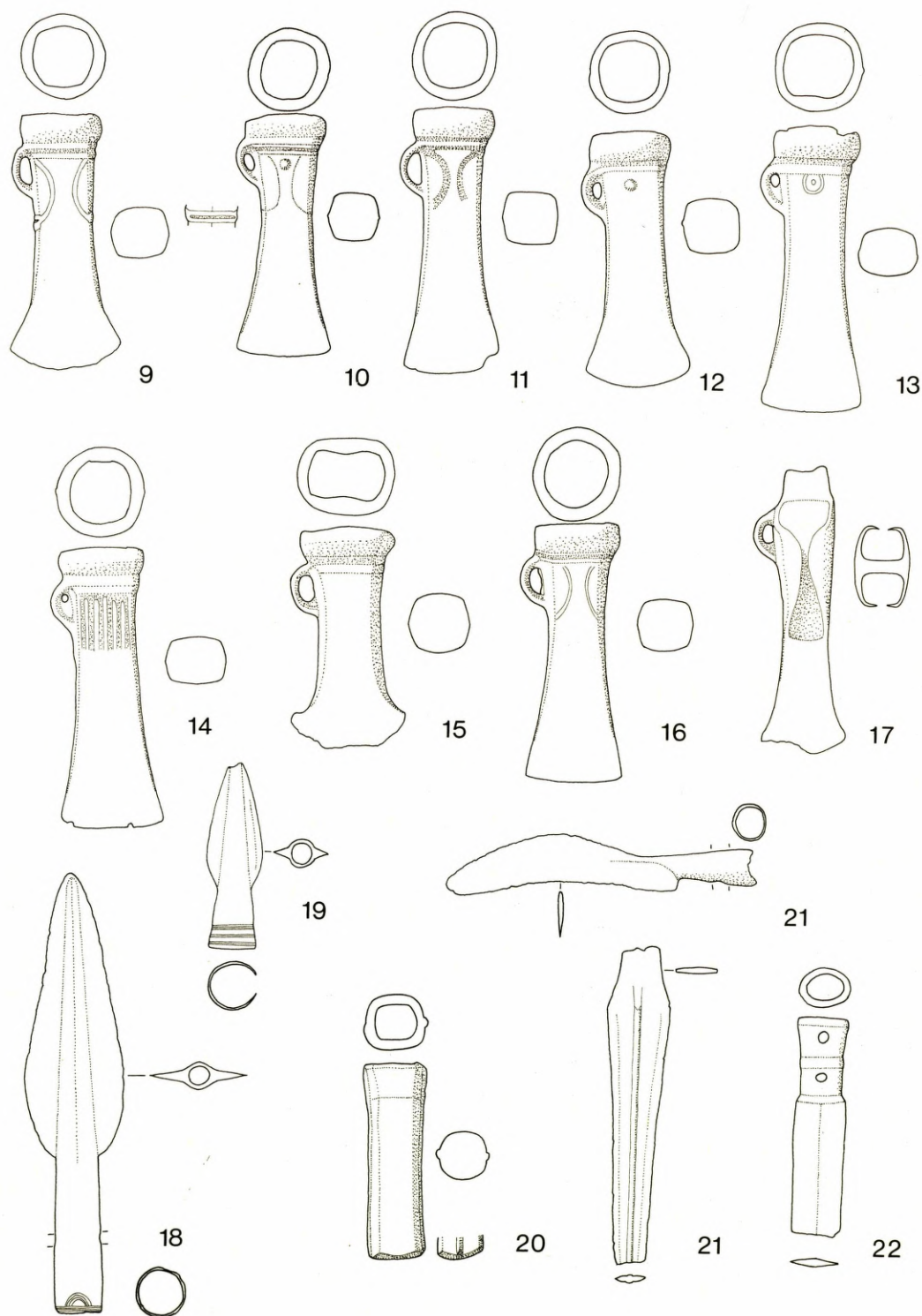


Fig. 66. Plainseau hoard.

Fig 67A

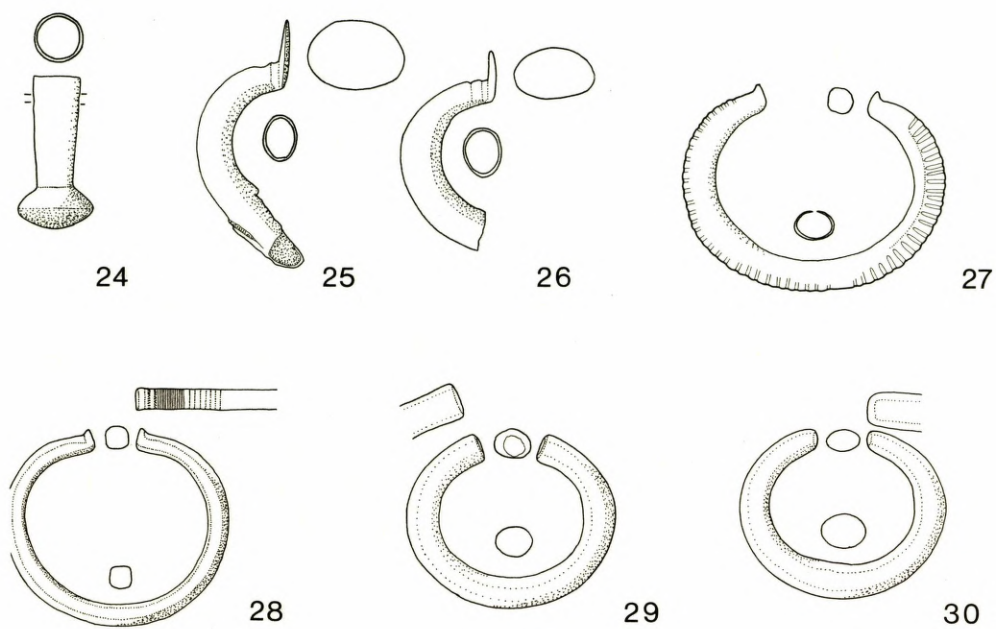


Fig 67B

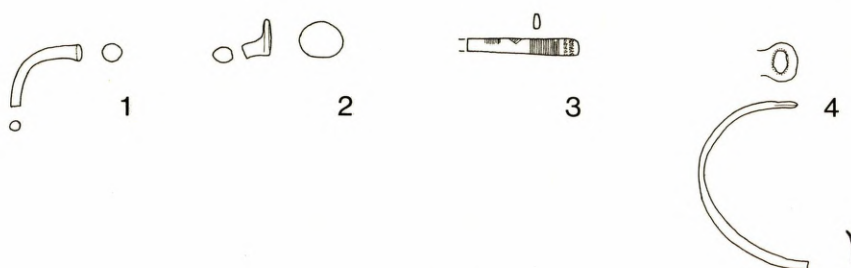


Fig. 67A. Plainseau hoard.
Fig. 67B. Saint-Roch hoard.

Fig 68

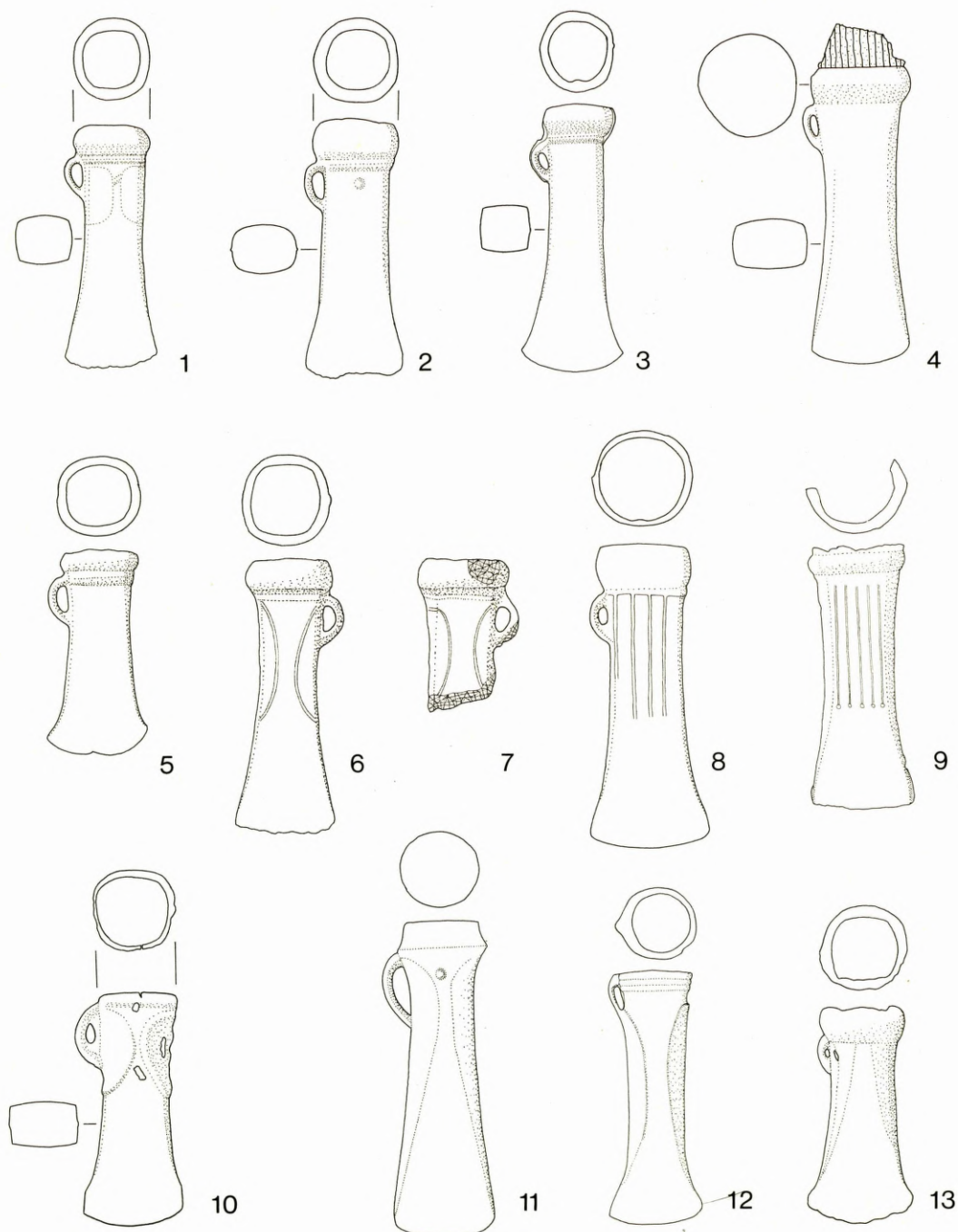


Fig. 68. 1-2. Amiens. 3-4. Seine at Paris. 5. Sint Armandsberg. 6. Hilvarenbeek. 7. Aveley hoard. 8. Ename. 9. Hoogstraten. 10. Nijmegen. 11. Antwerp Museum. 12. Ghent. 13. Waasmunter.

Fig 69

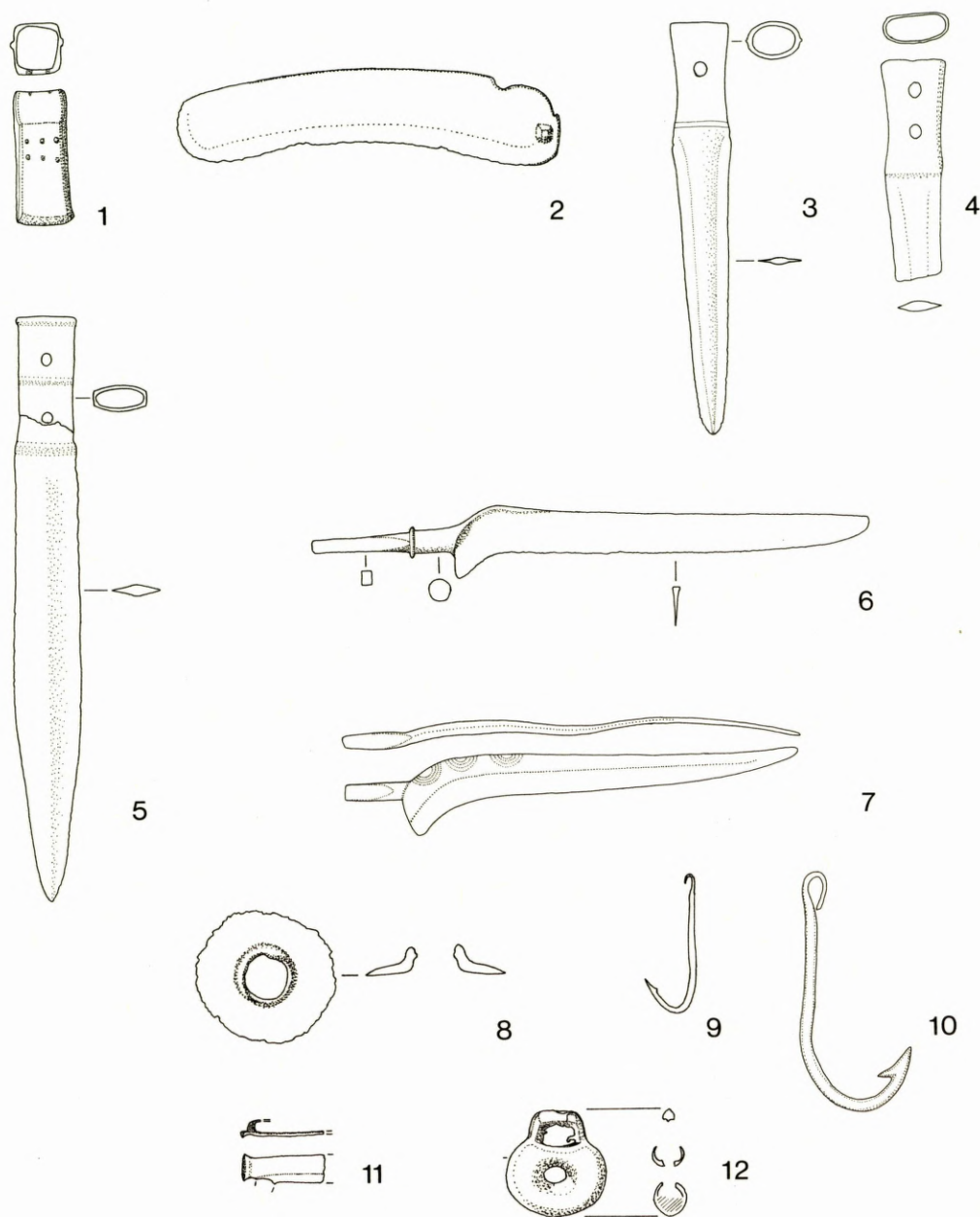


Fig. 69. 1. Beaudreville. 2. ?Thames. 3. Seine at Paris. 4. Amiens. 5. Seine at Charenton. 6. Dreslincourt. 7. Prov. Namur. 8. Heathrow. 9. Thames at Barnes. 10. Wichelen. 11-12. Levington hoard.

Fig 70

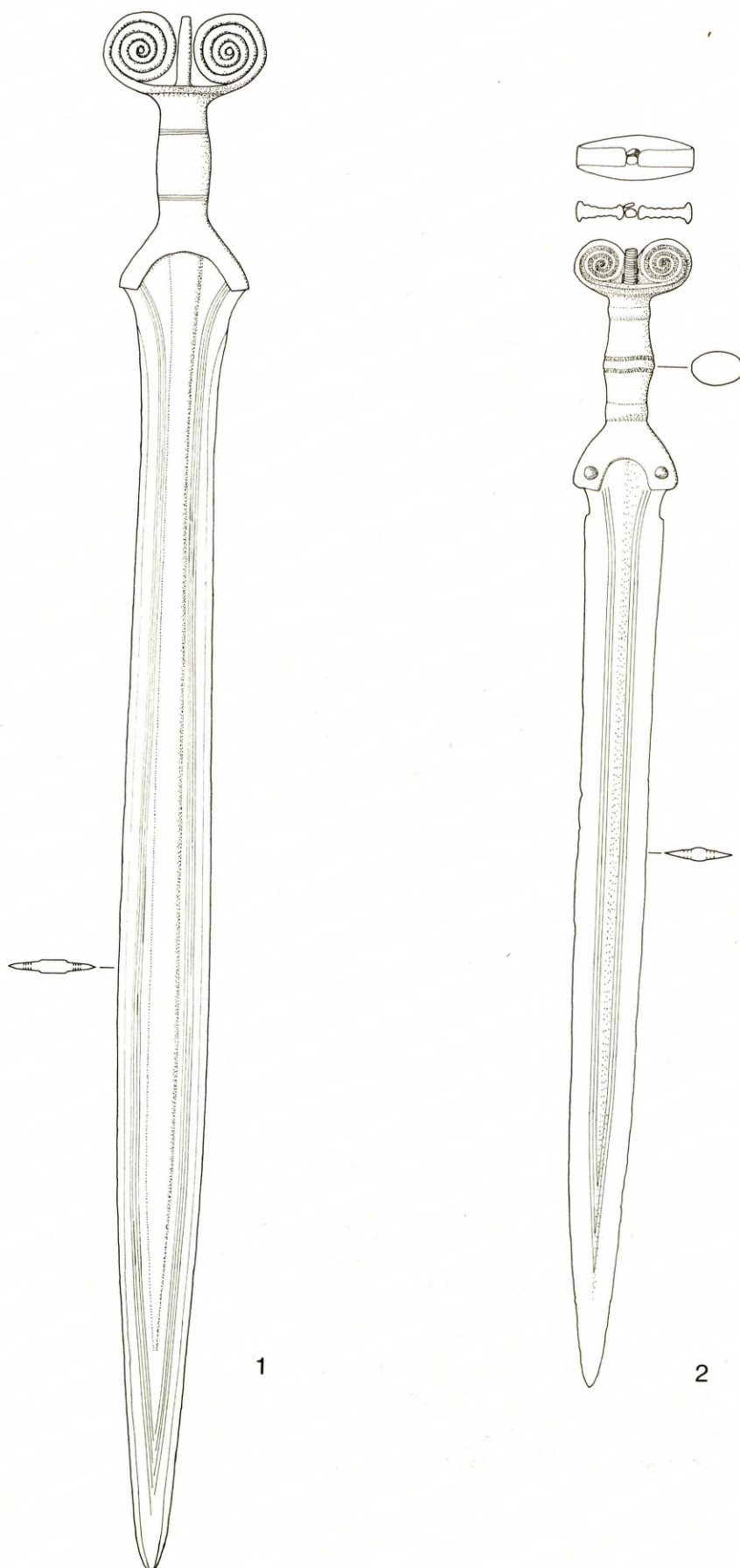


Fig. 70. 1. R. Witham below Lincoln.
2. Onnen.

Fig 71

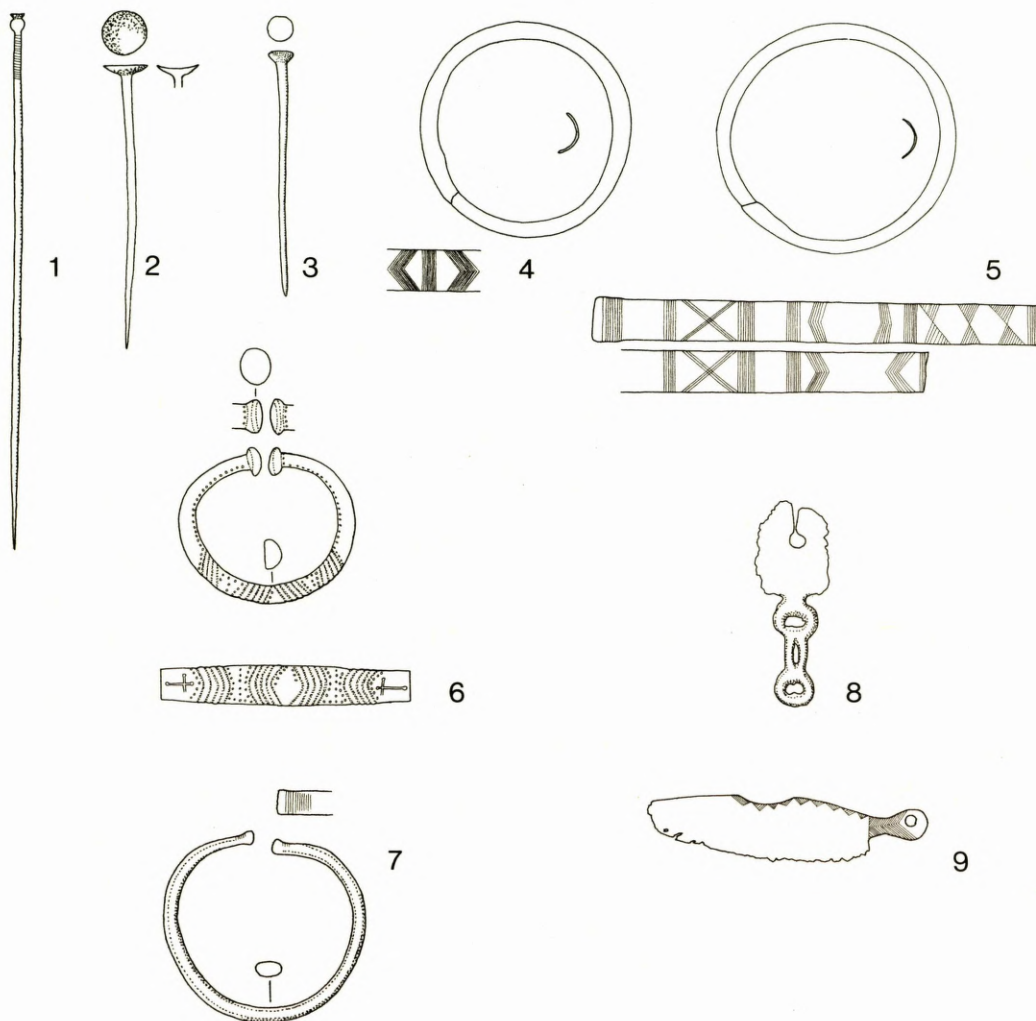


Fig. 71. 1. Seine at Paris. 2. Thames at Sion Reach.
3. Great Cheverell Down. 4-5. Tourville-la-Rivière.
6. Dorset. 7. Dorchester. 8-9. Thames at Old England.

Fig 72A

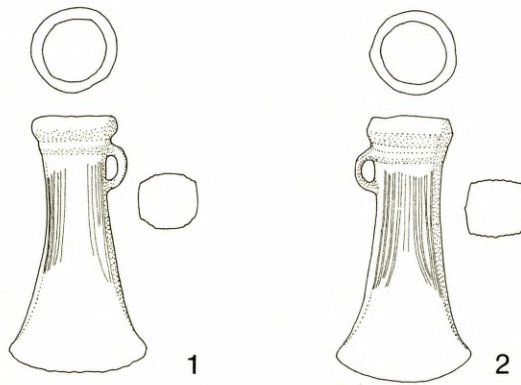


Fig 72B

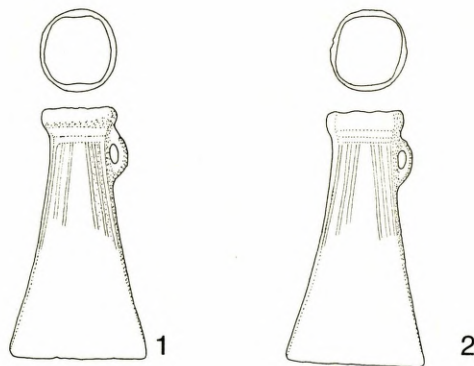


Fig 72C

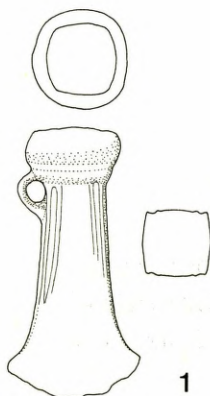


Fig. 72A. Wicken Fen hoard.

Fig. 72B. Blandford hoard.

Fig. 72C. Paston hoard.

Fig 73A

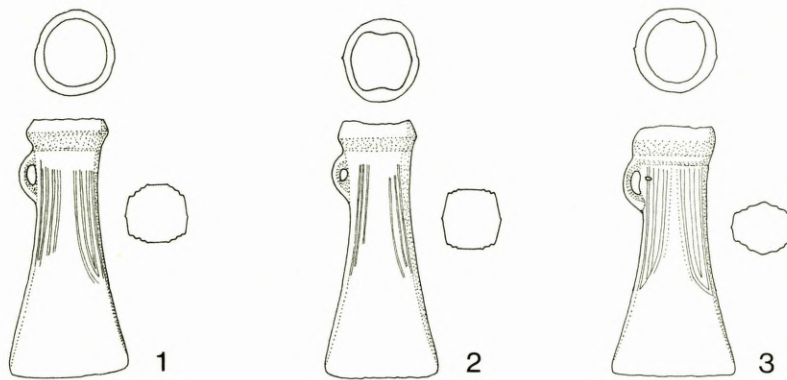


Fig 73B

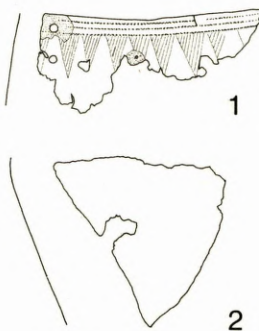


Fig 73C

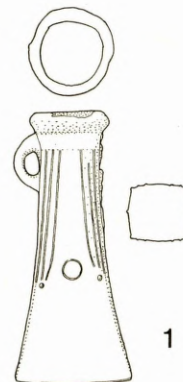


Fig 73D

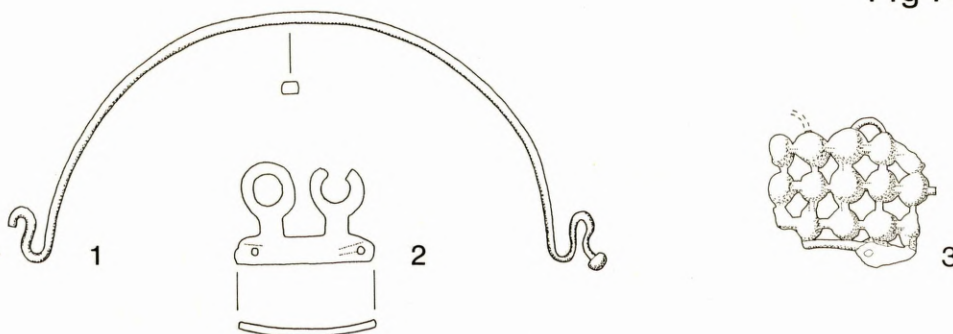


Fig. 73A. Watton hoard.
Fig. 73B. Adabrock hoard.
Fig. 73C. Sompting hoard.
Fig. 73D. Wijchen.

Fig74

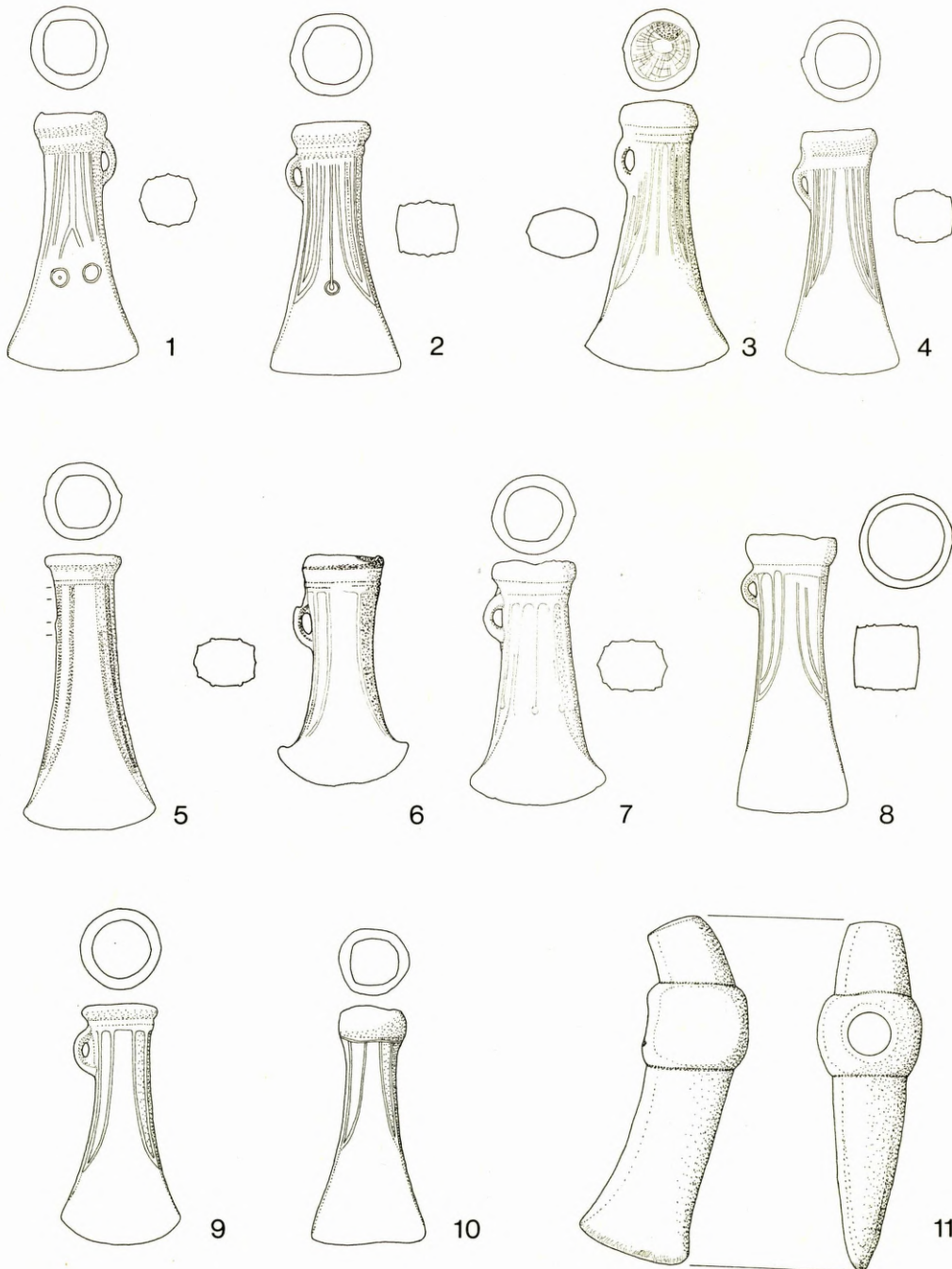


Fig. 74. 1. ?Cambridge area. 2. Reach. 3. Hockwold. 4. Little Massingham. 5. West Moor. 6. Butley hoard. 7. Mildenhall. 8. Oise near Compiègne. 9. Seine at Paris. 10. Meuse near Roermond. 11. Thames at Sion Reach.

Fig 75

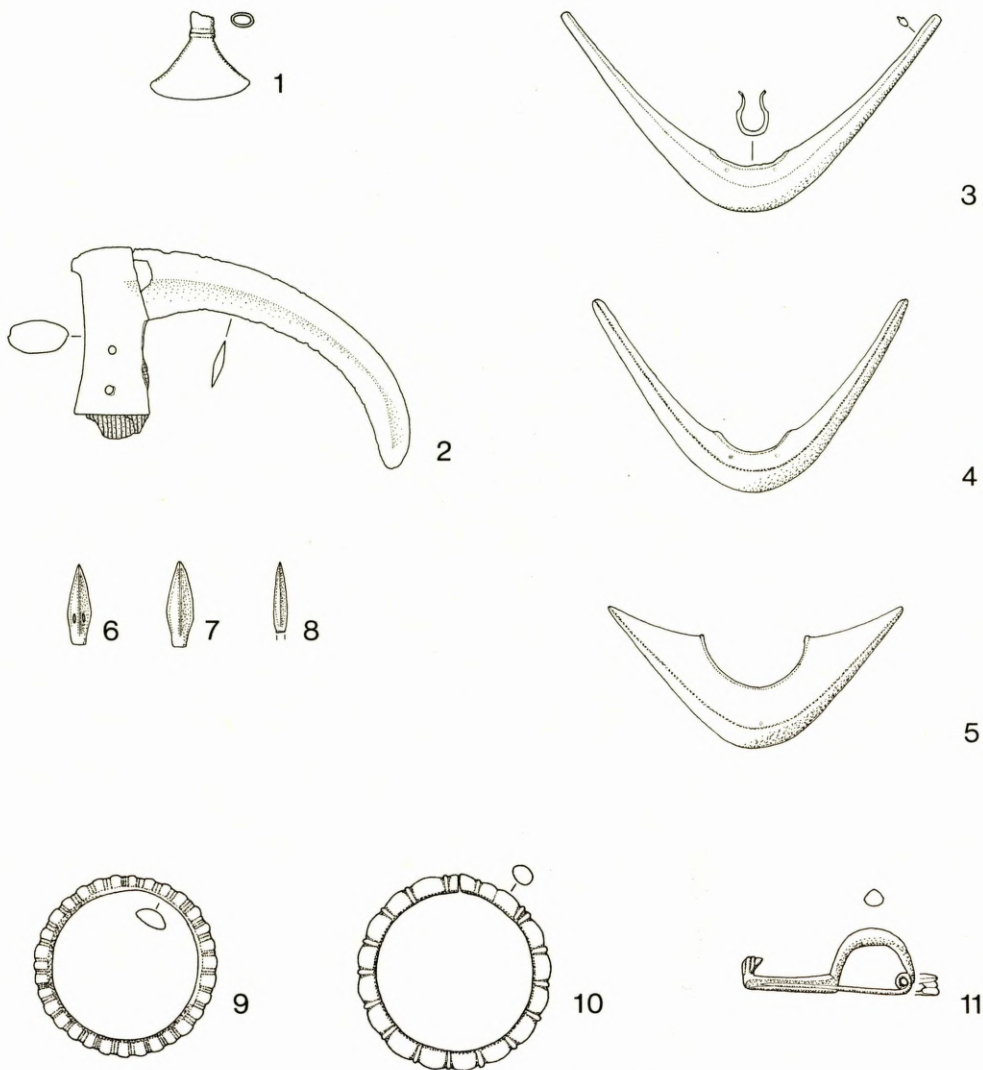


Fig. 75. 1. Staffordshire. 2. Seine at Paris.
3. Teversham. 4-5. Undley. 6-8. Turnhout. 9. Thames.
10. Near Antrim. 11. Amiens.

Fig 76

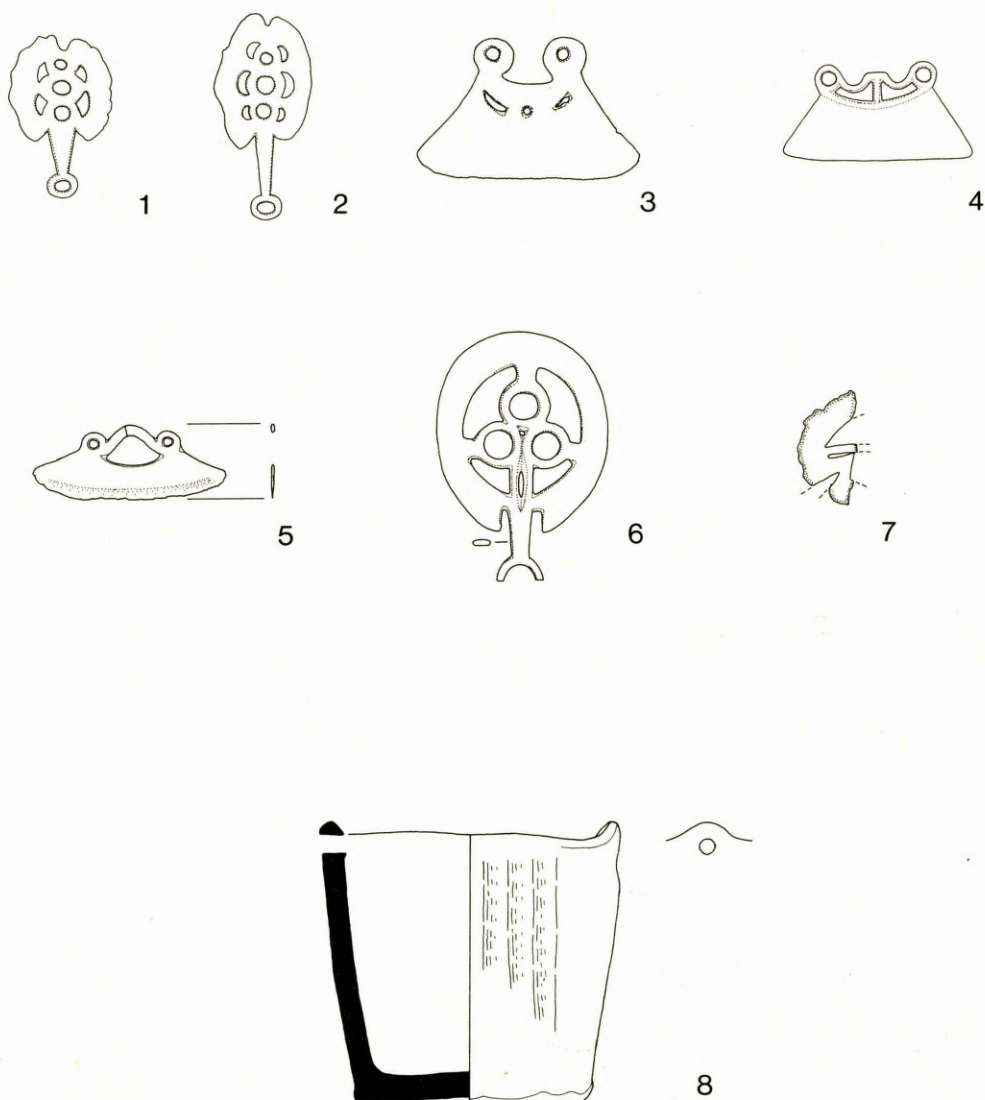
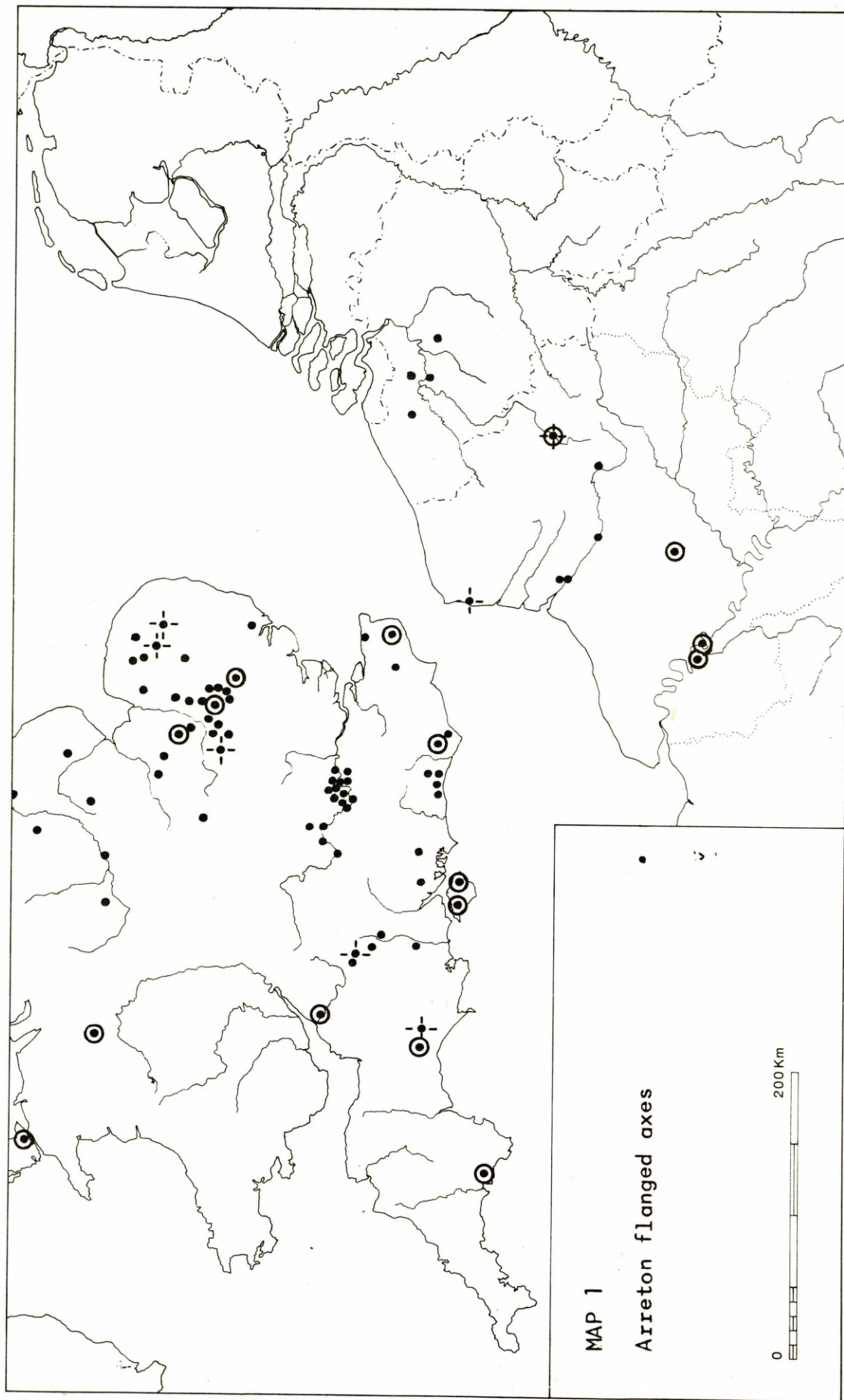
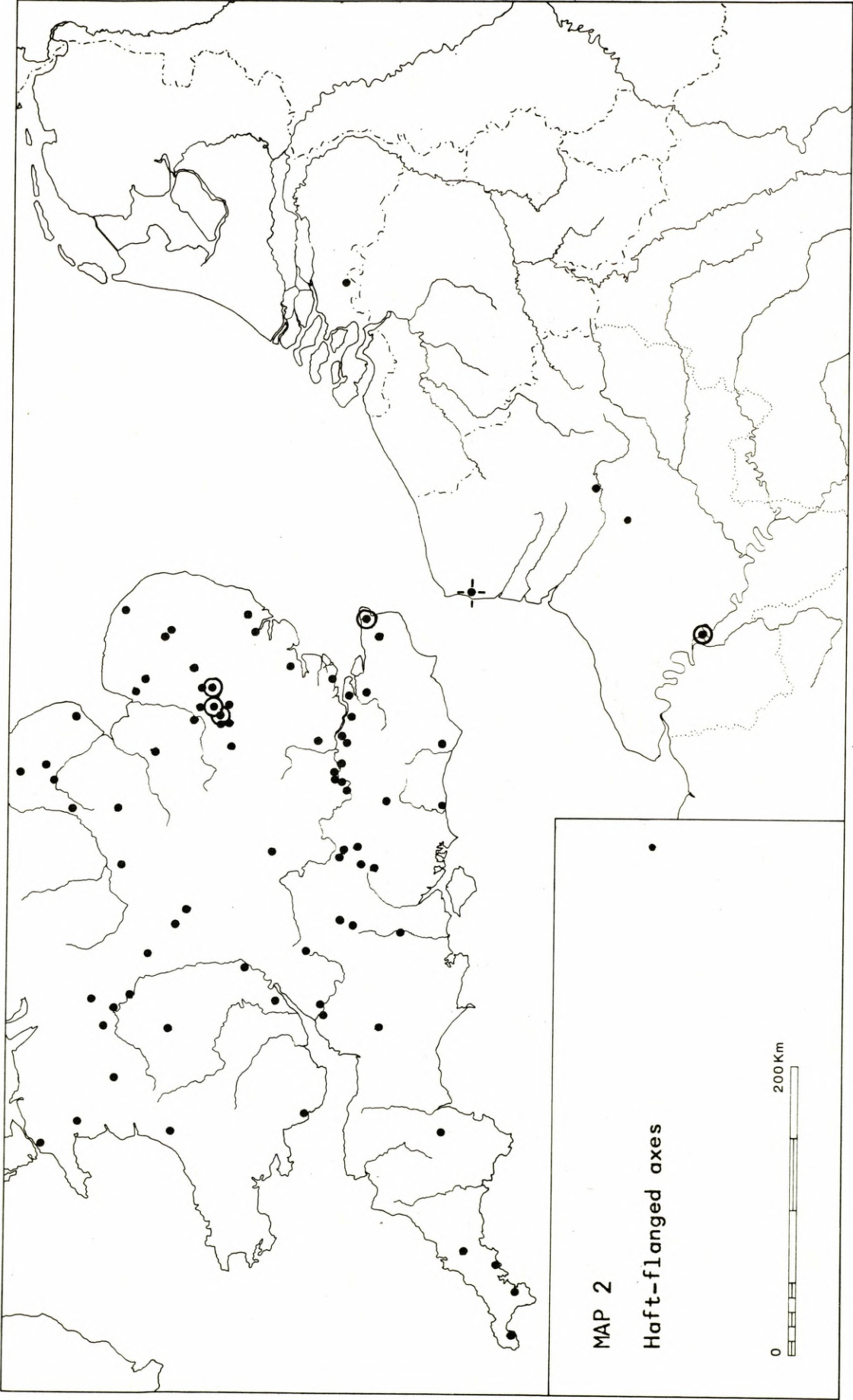
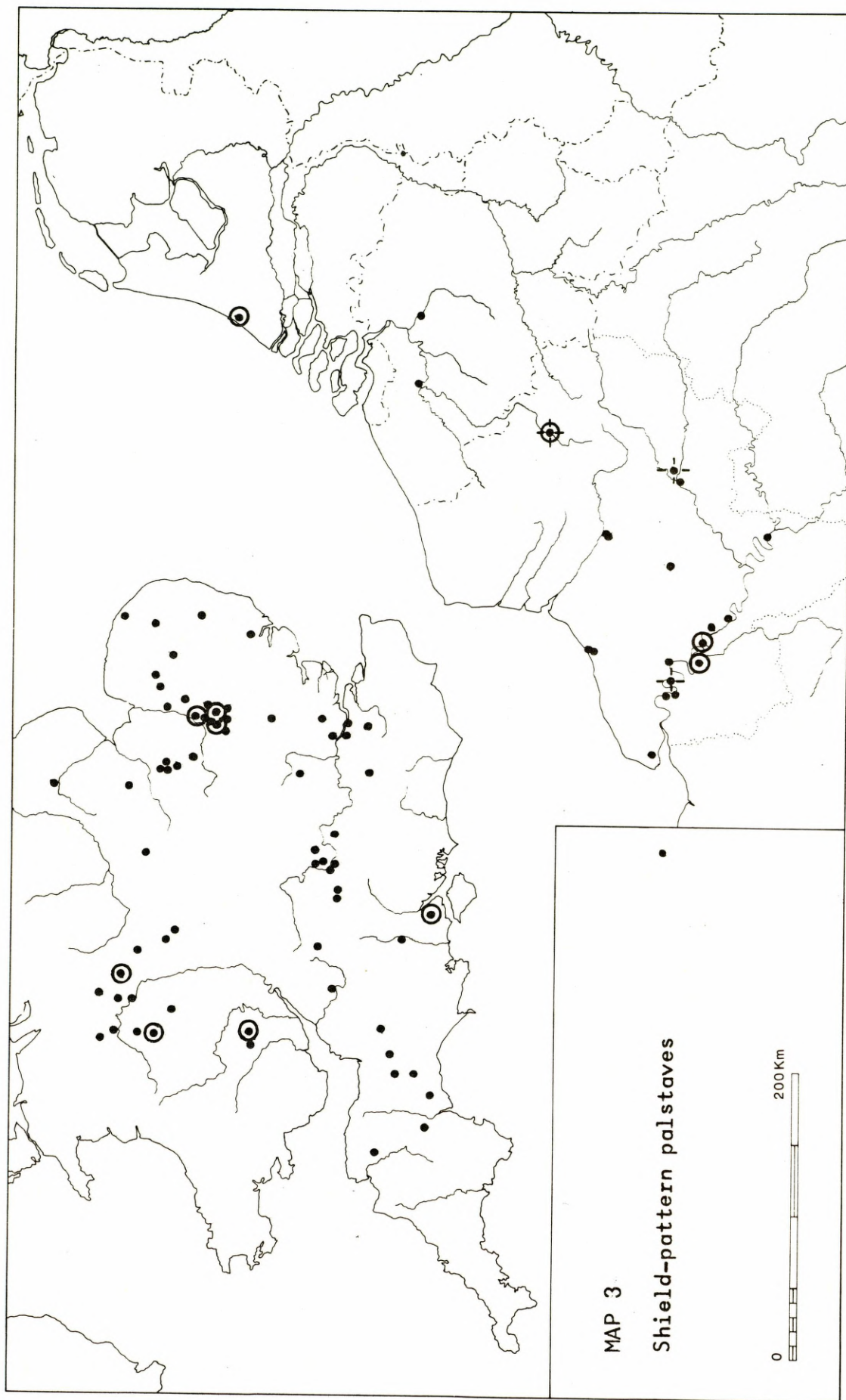
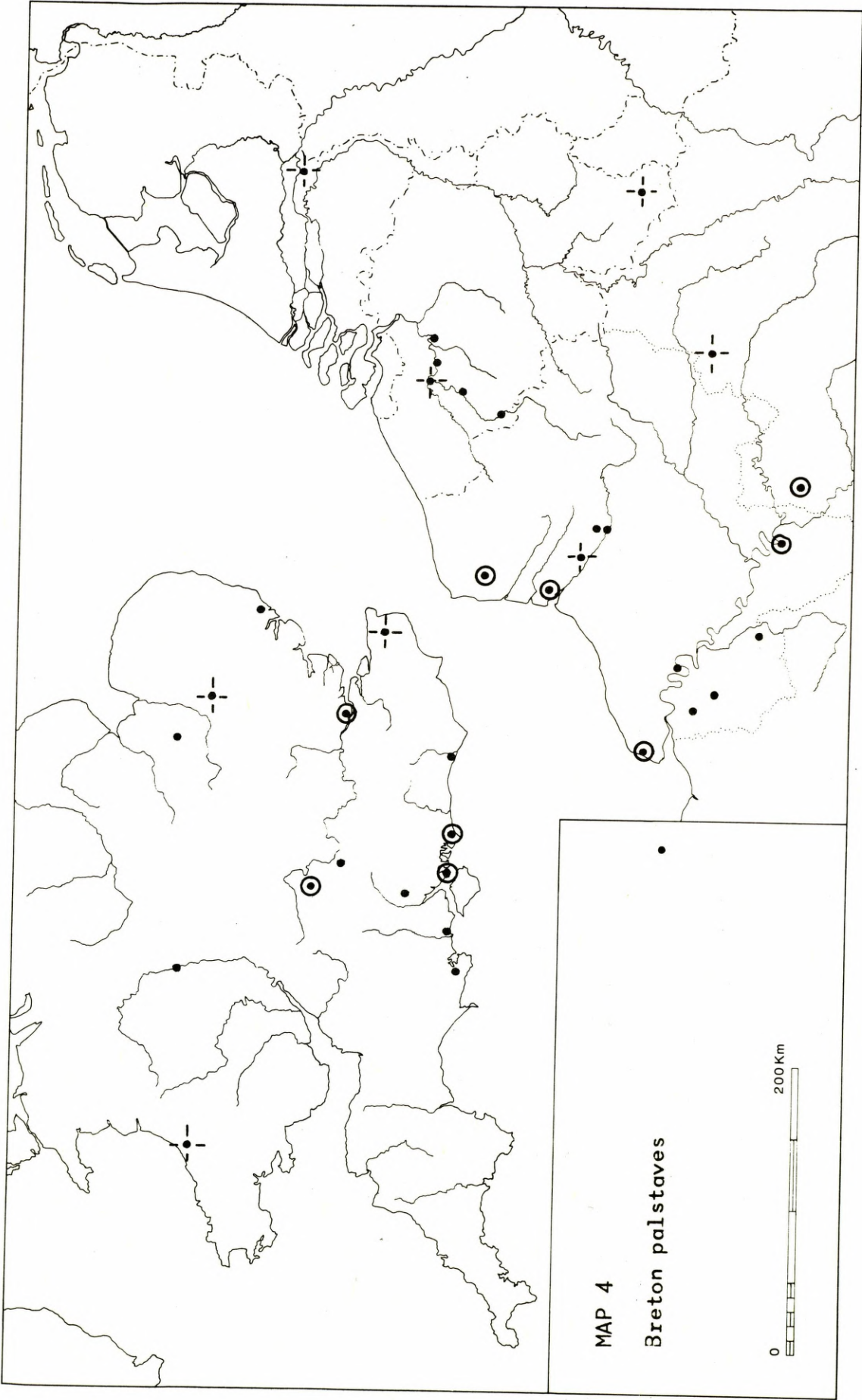


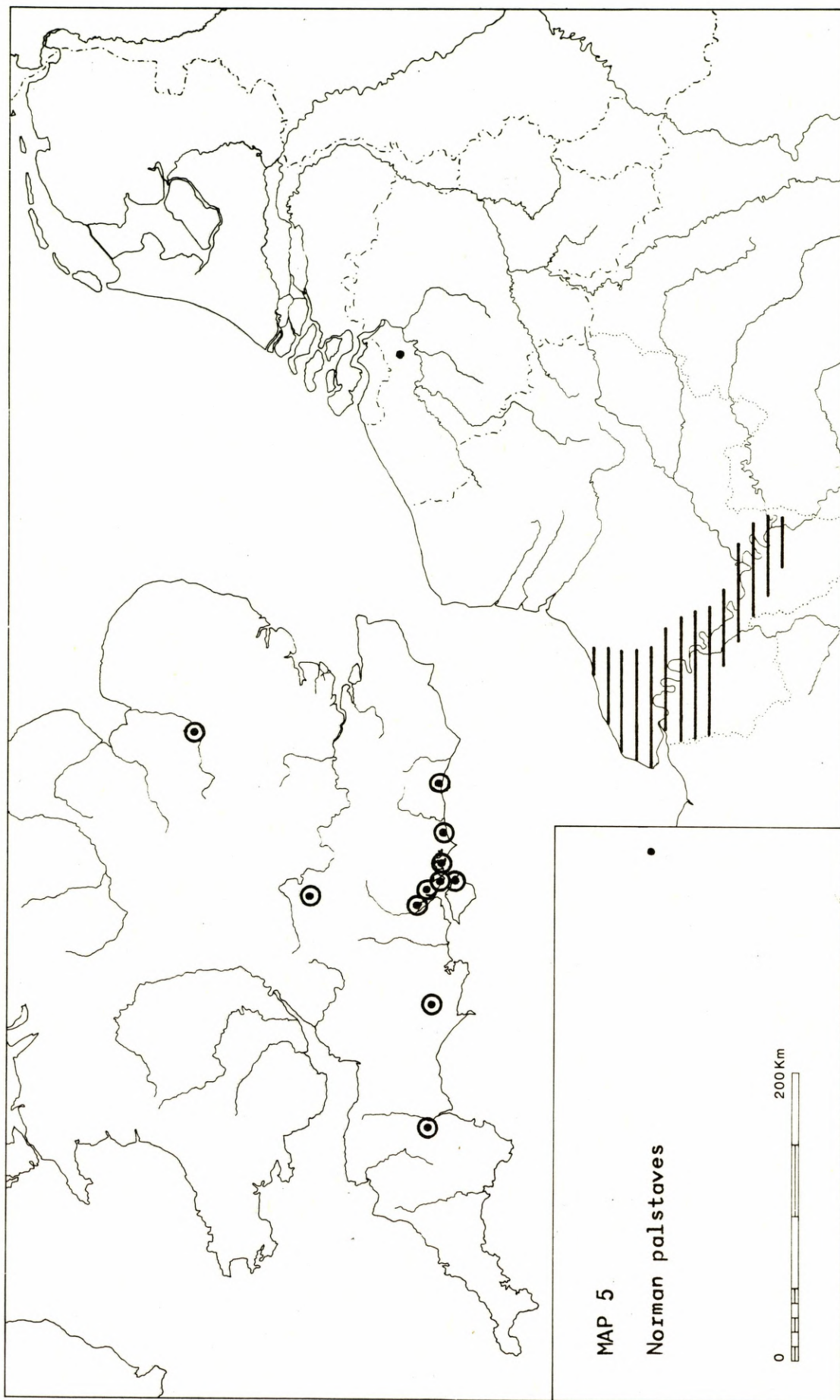
Fig. 76. 1. Eprave. 2. Prov. Namur. 3. Danebury hoard. 4. Seine above Villeneuve-Saint-Georges. 5. Bernissart. 6. Danebury hoard. 7. Staple Howe. 8. Ardleigh.

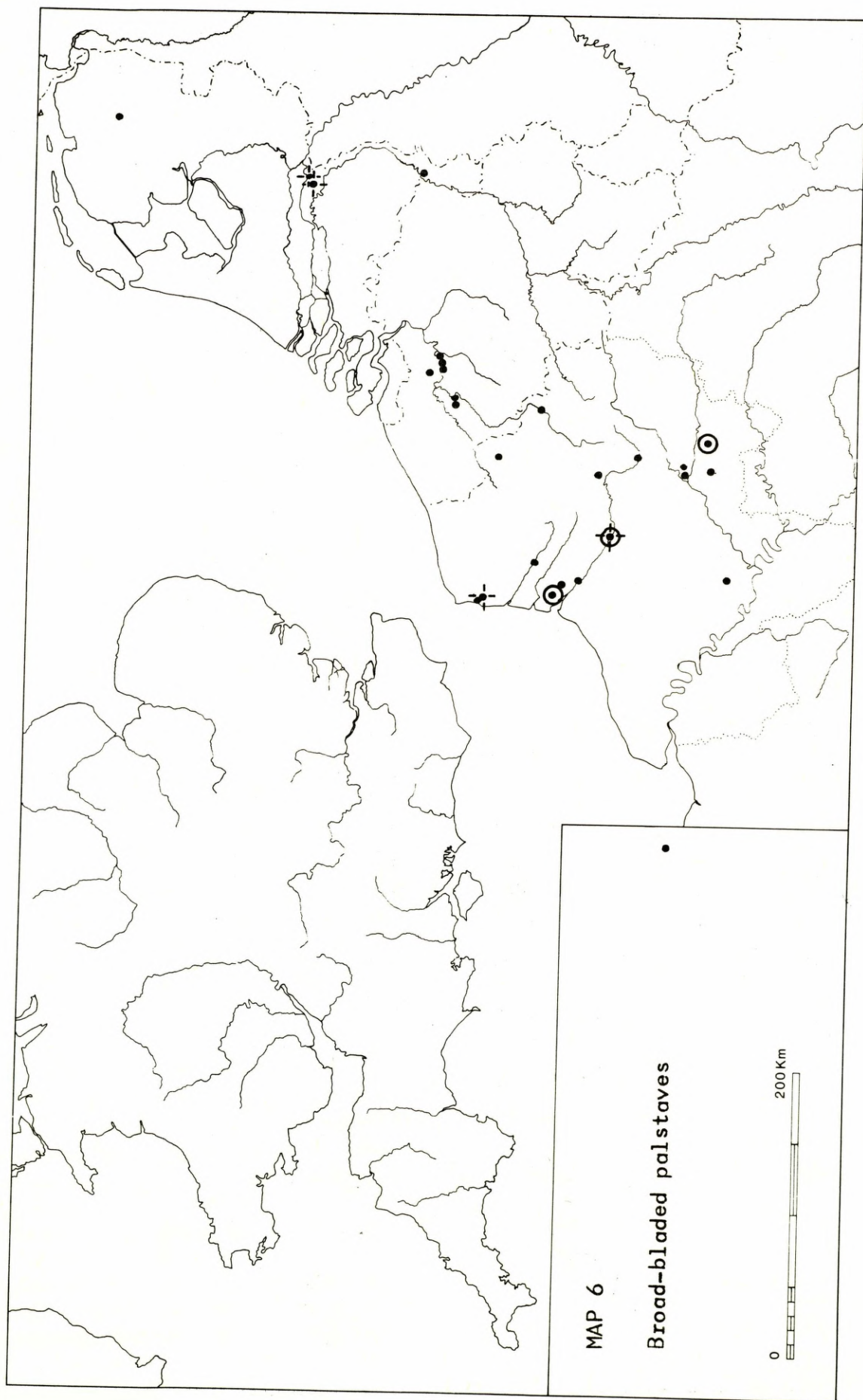


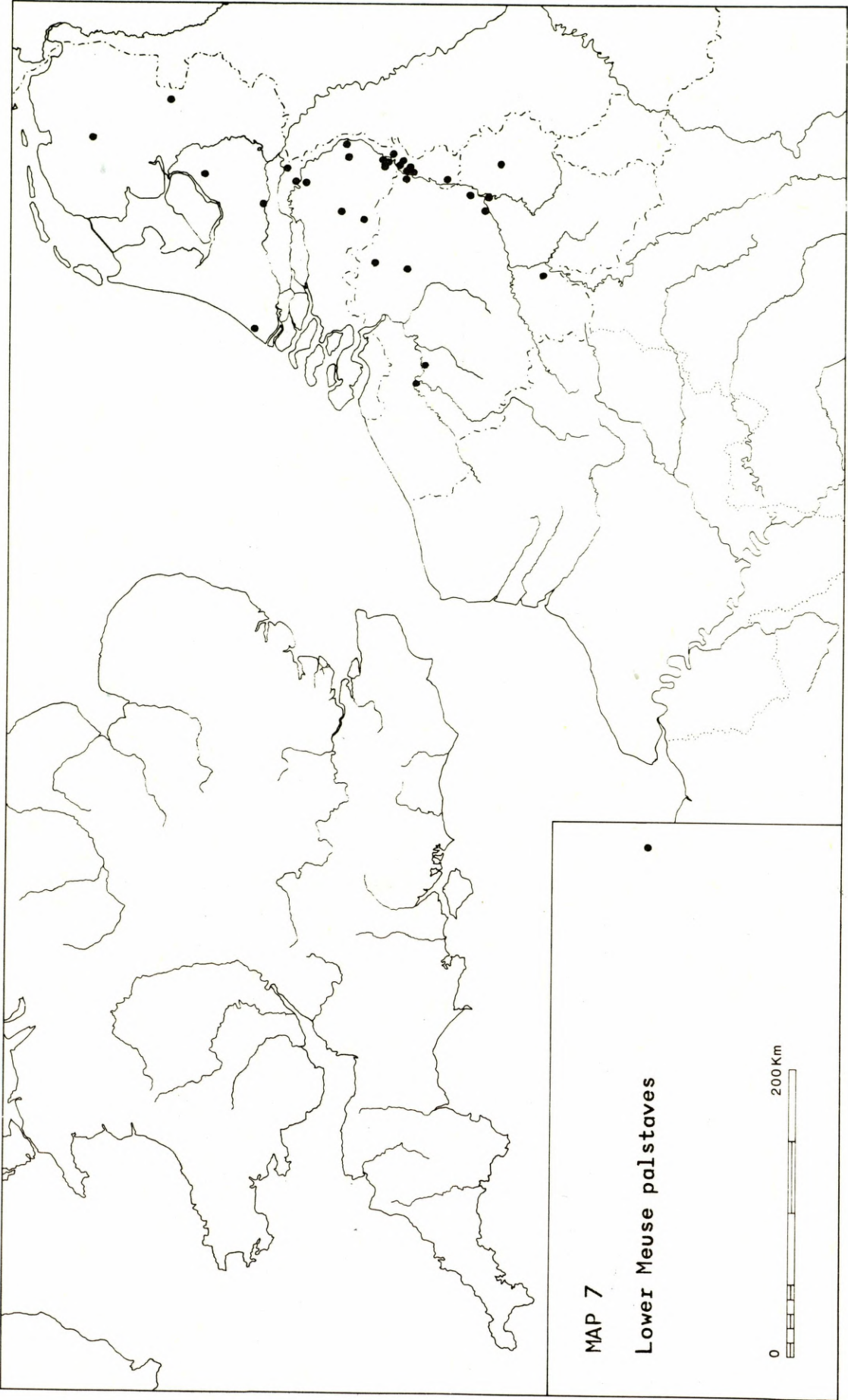


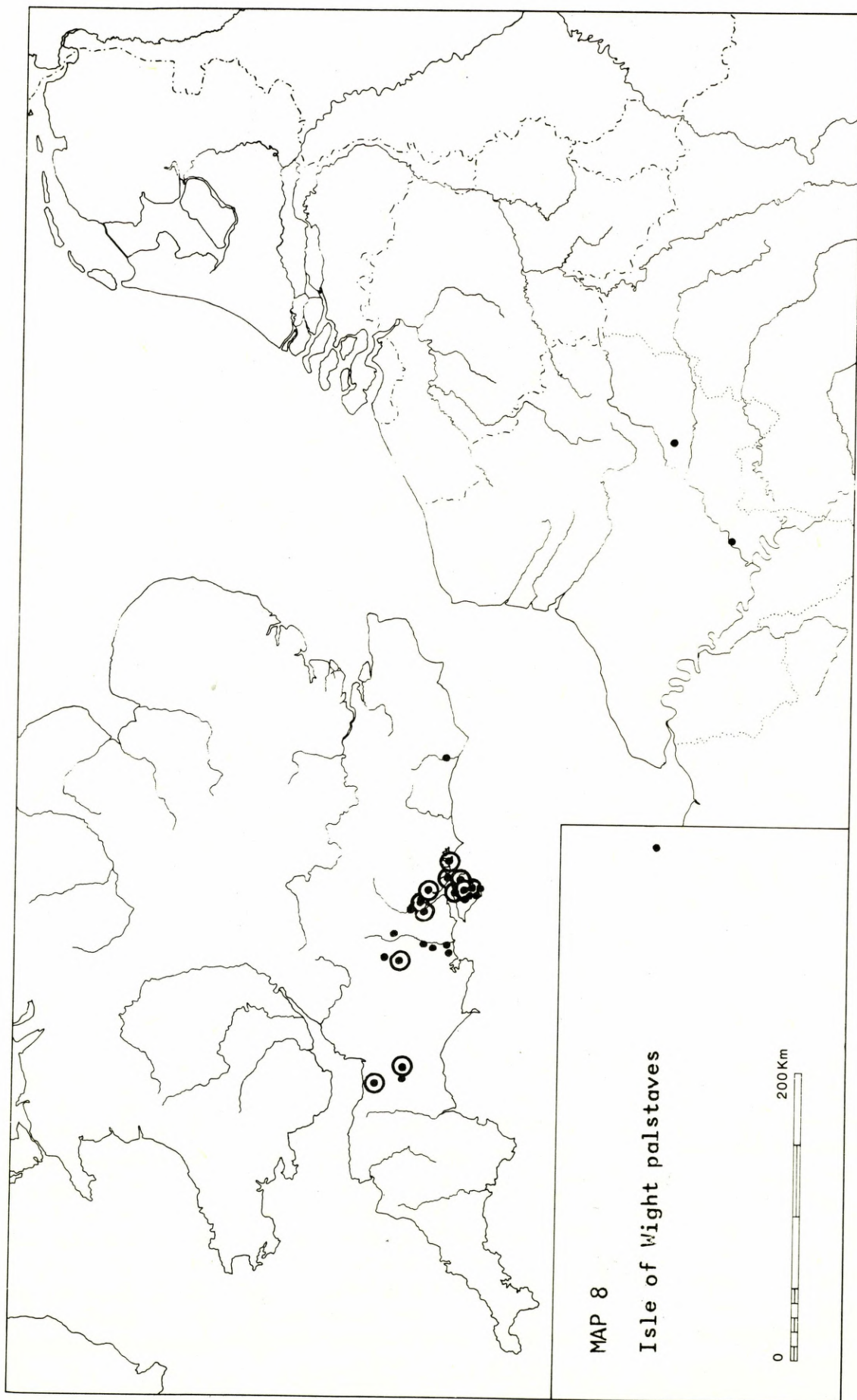


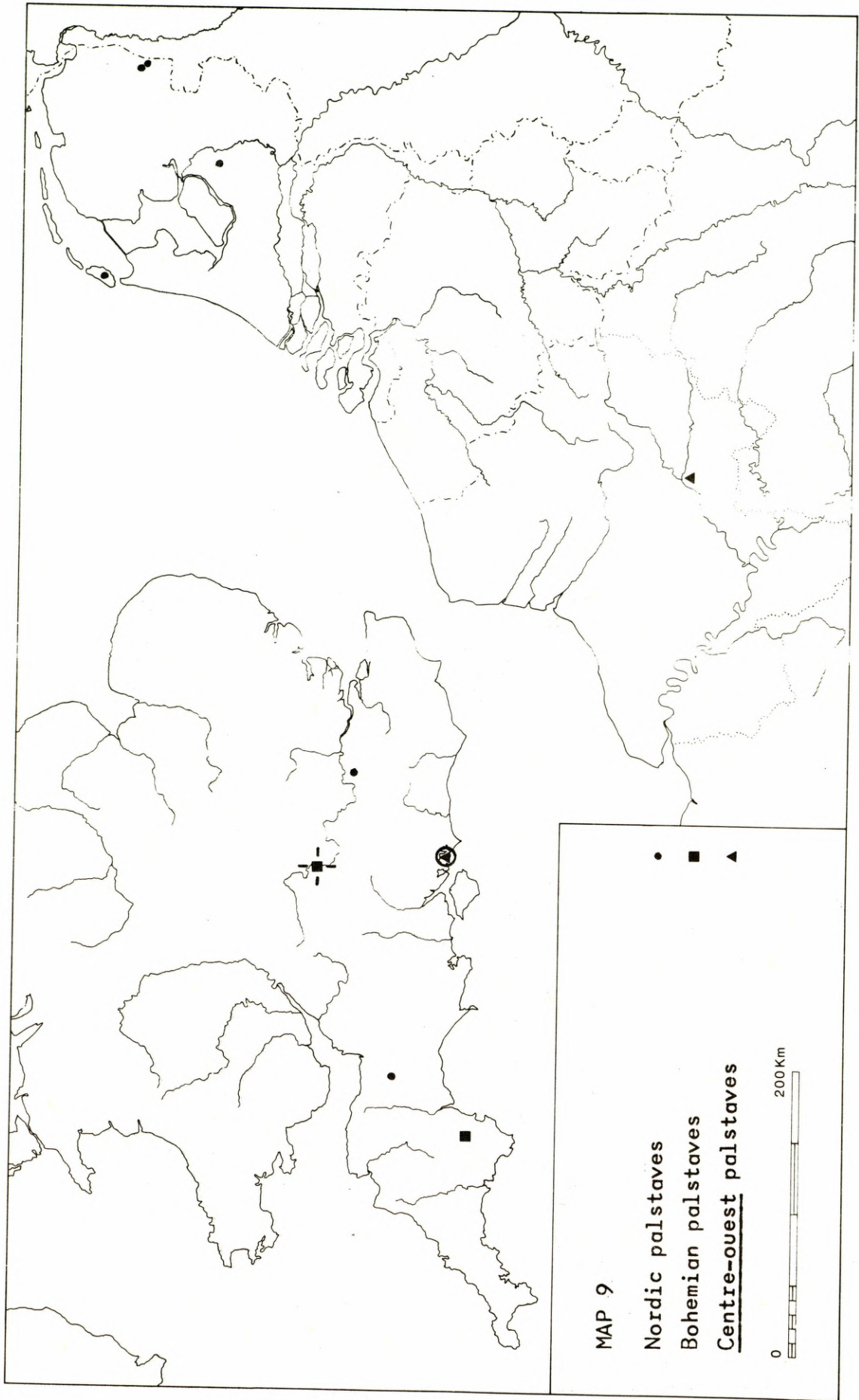


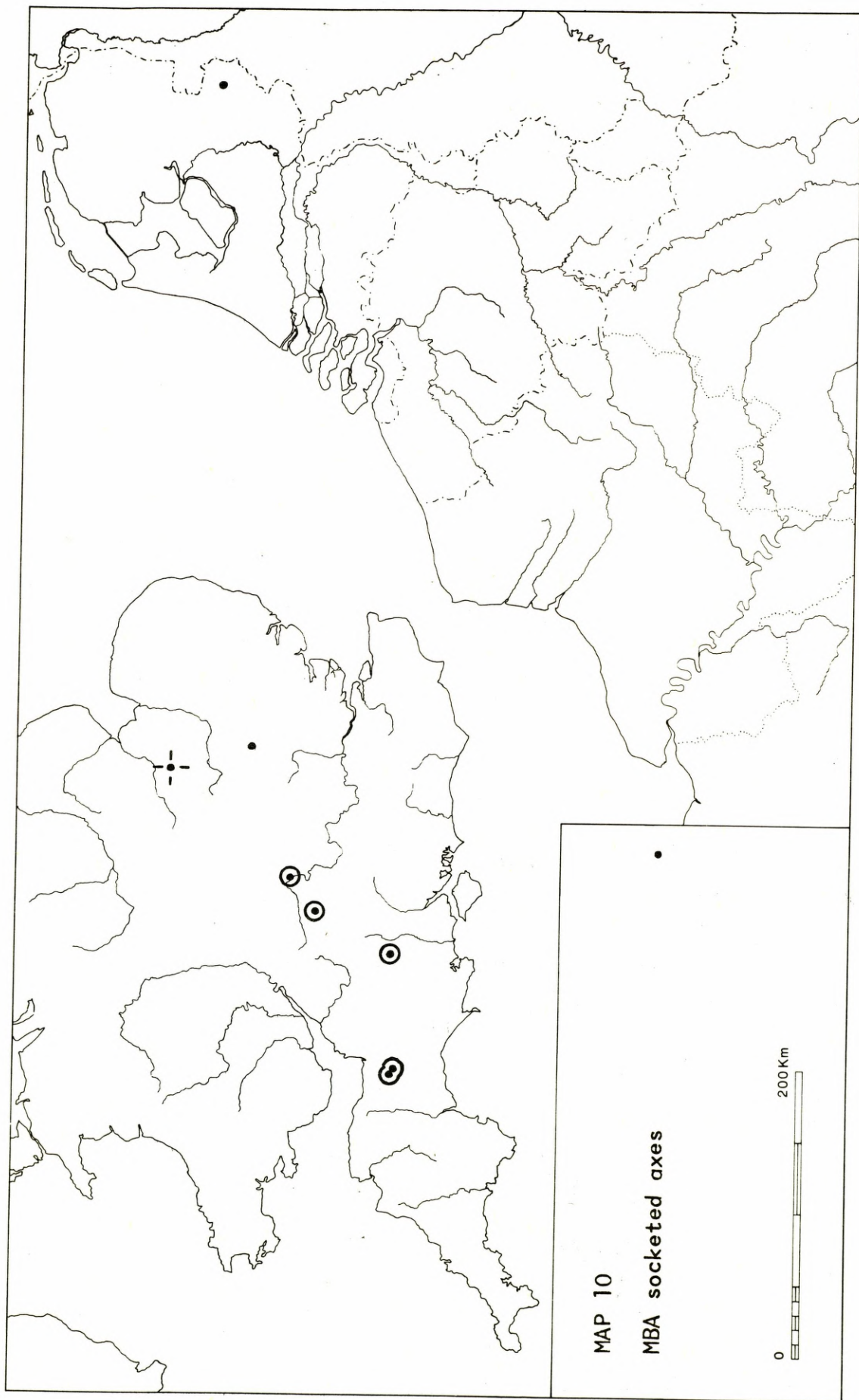


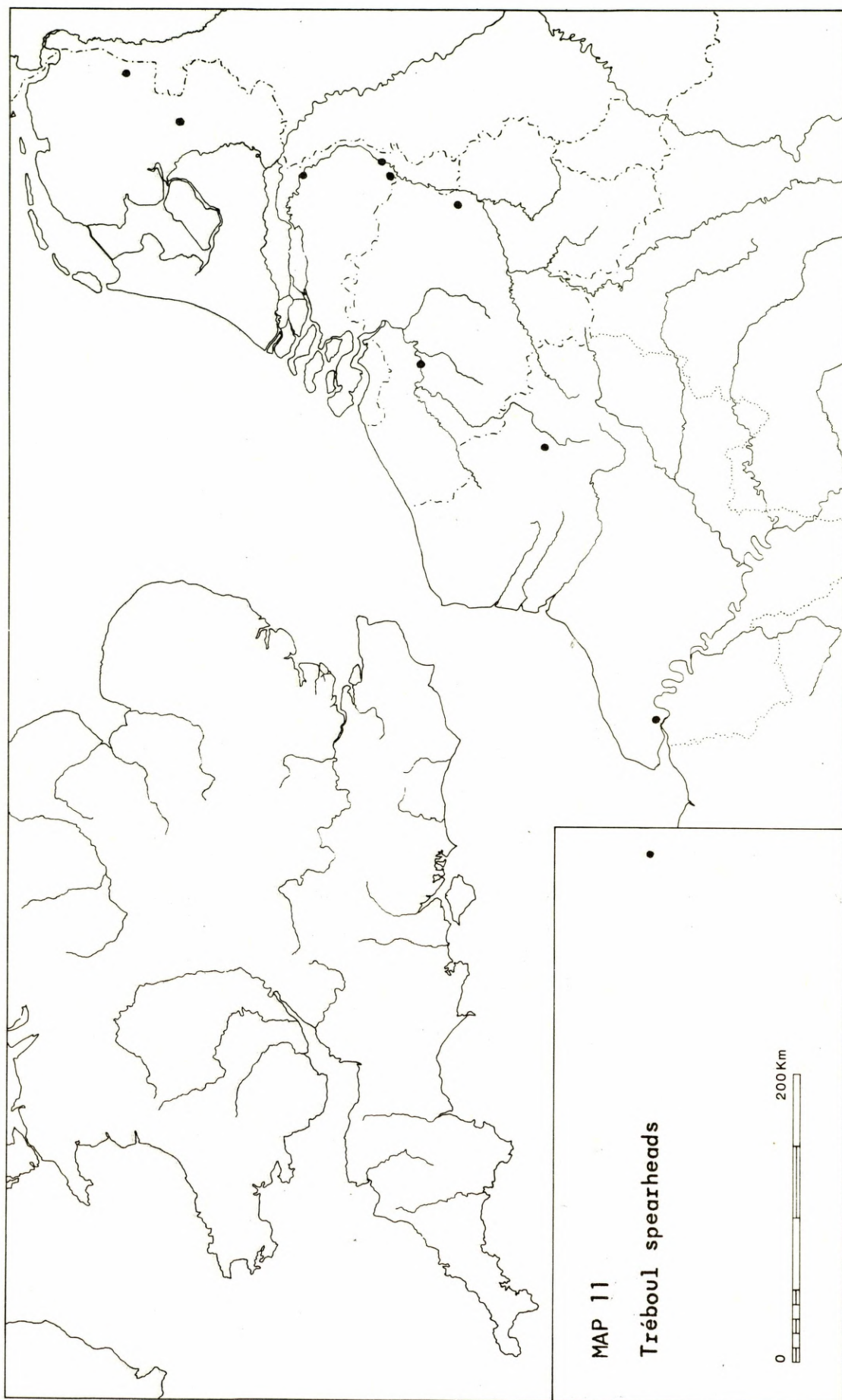


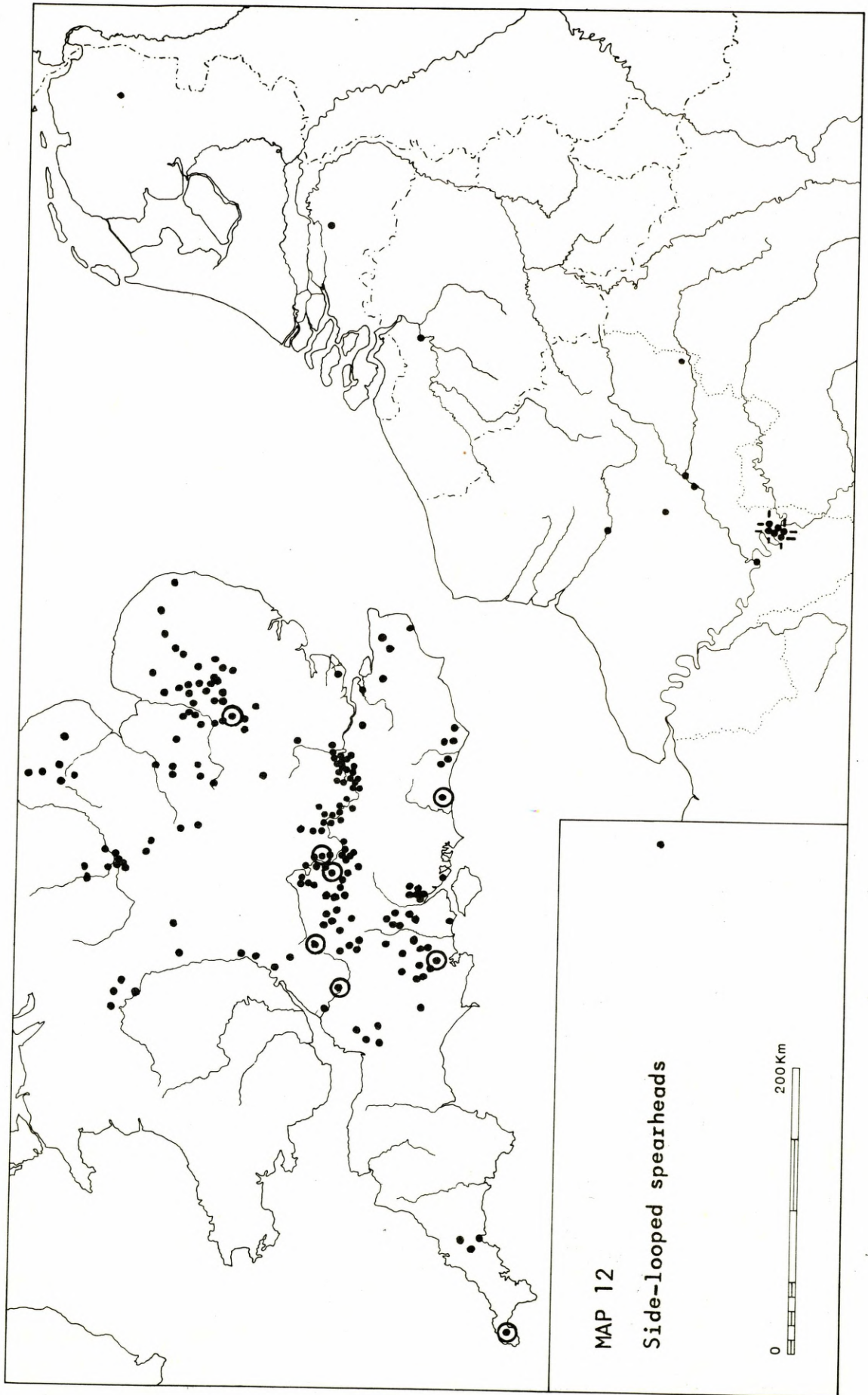


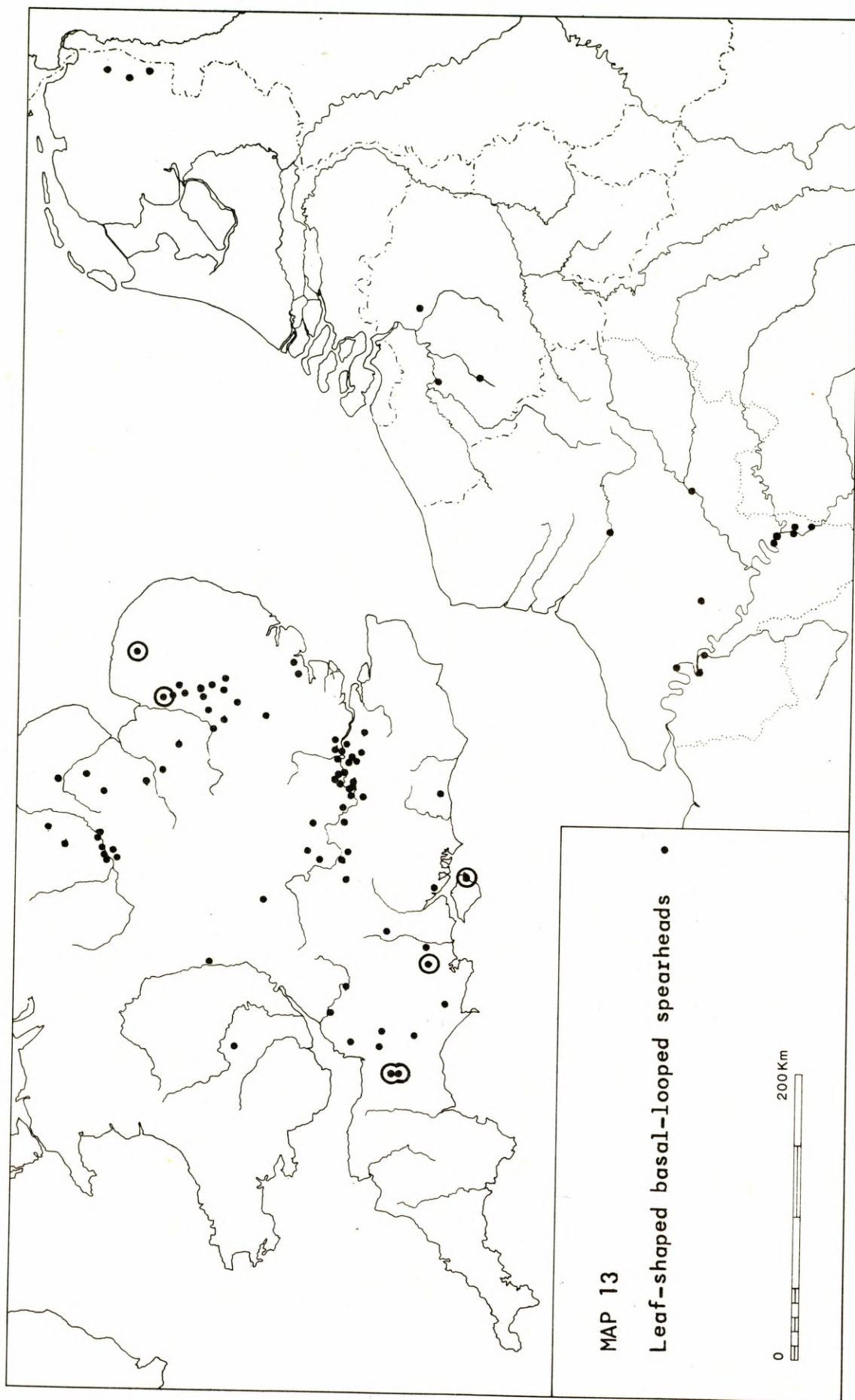


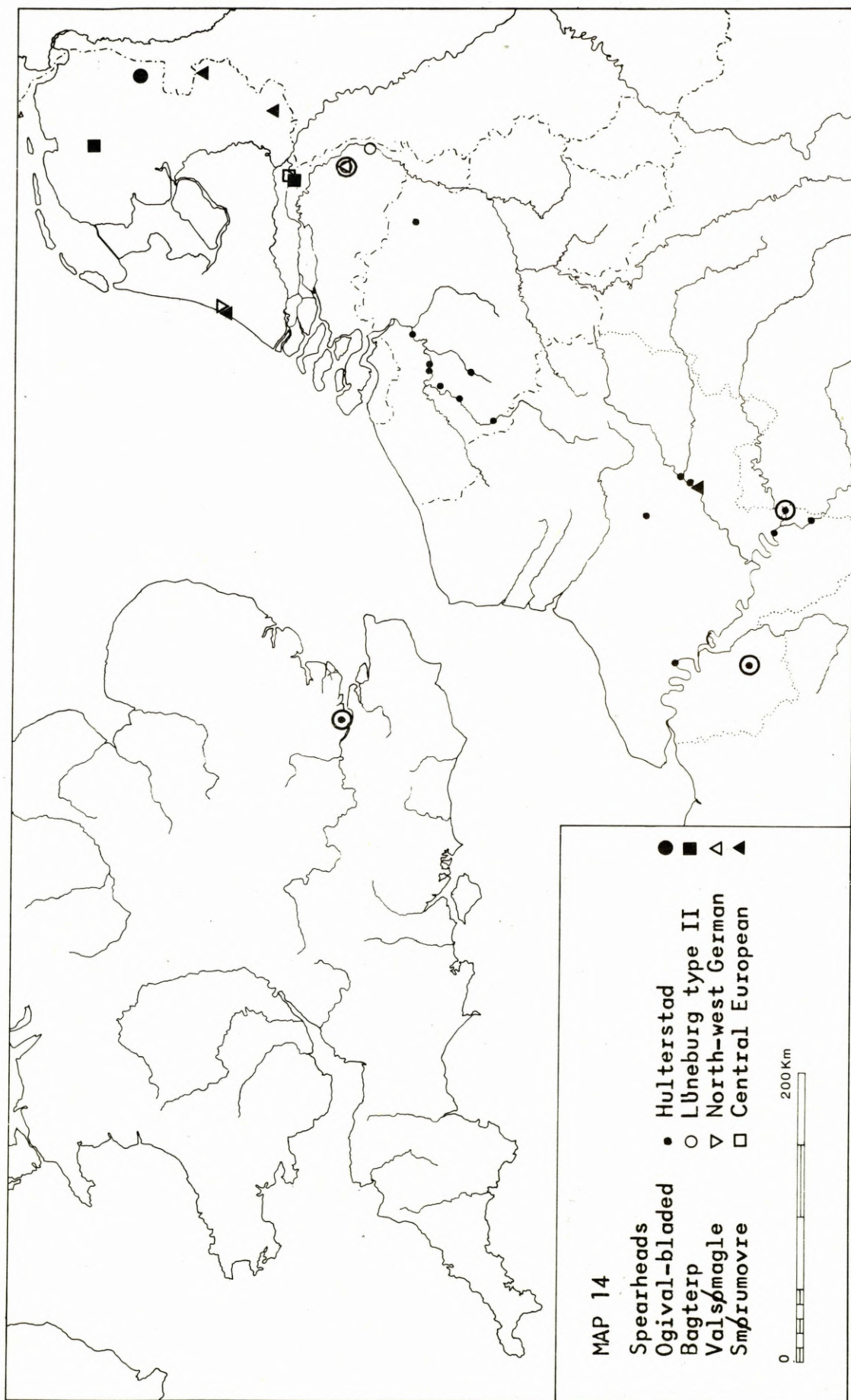


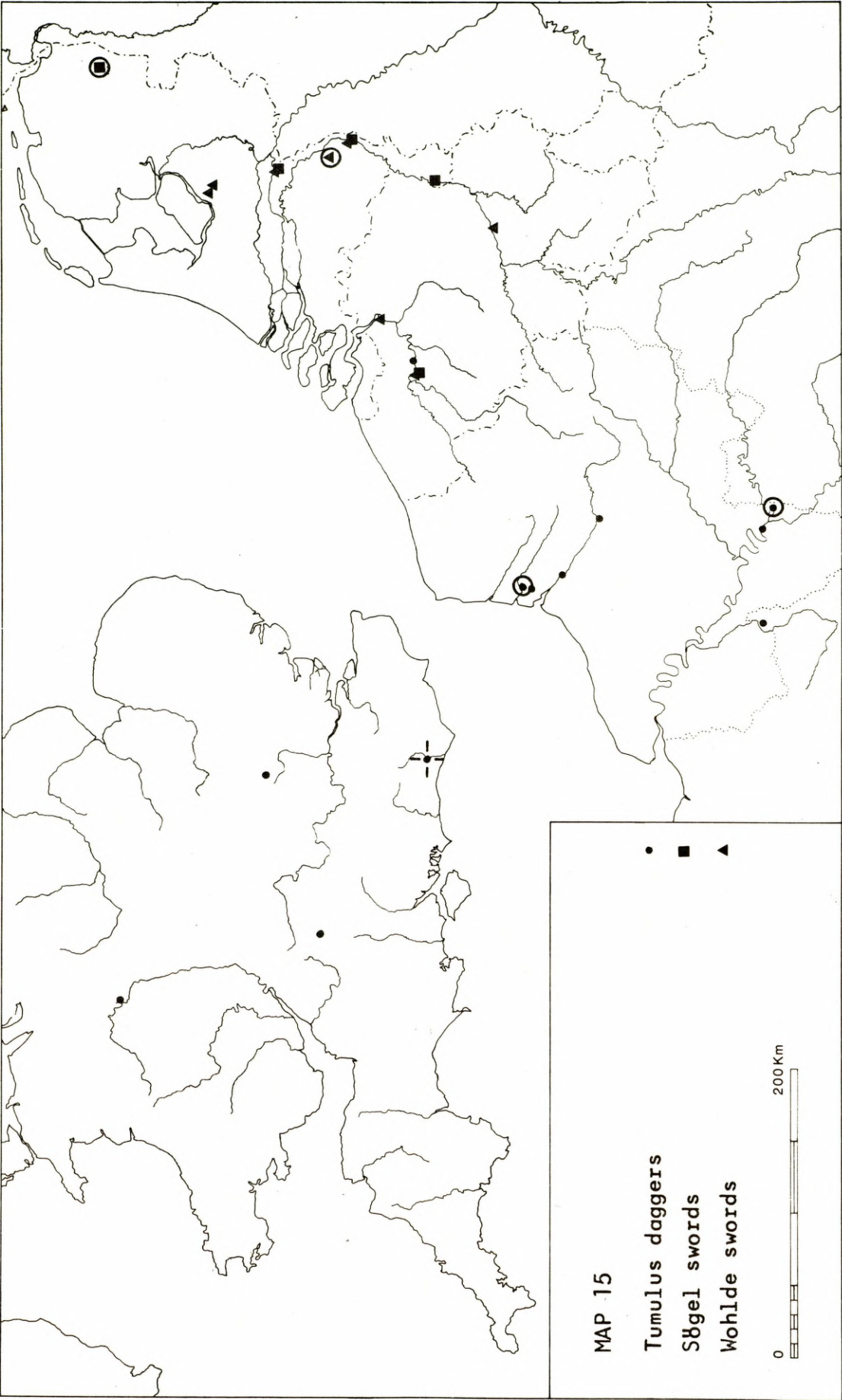


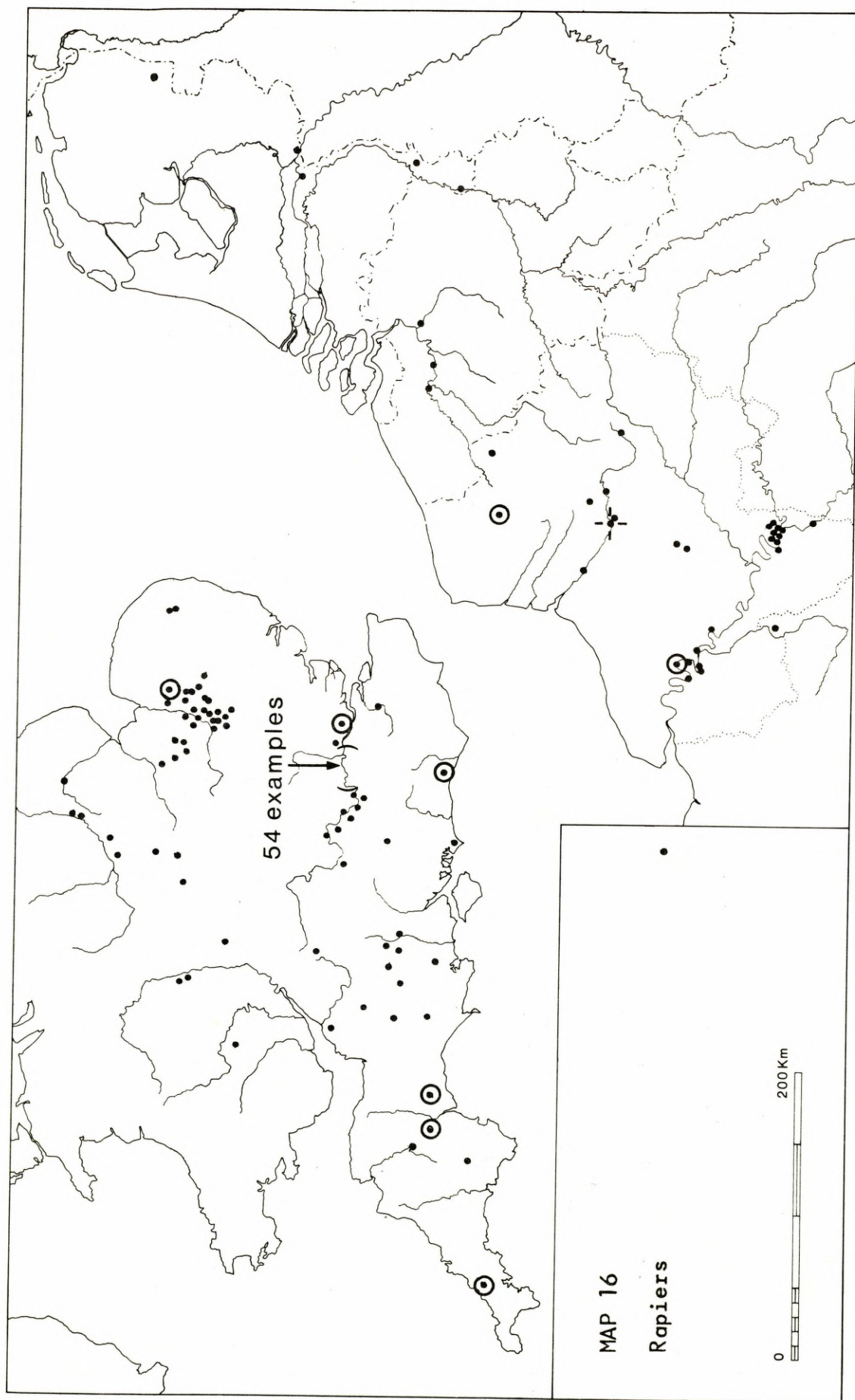


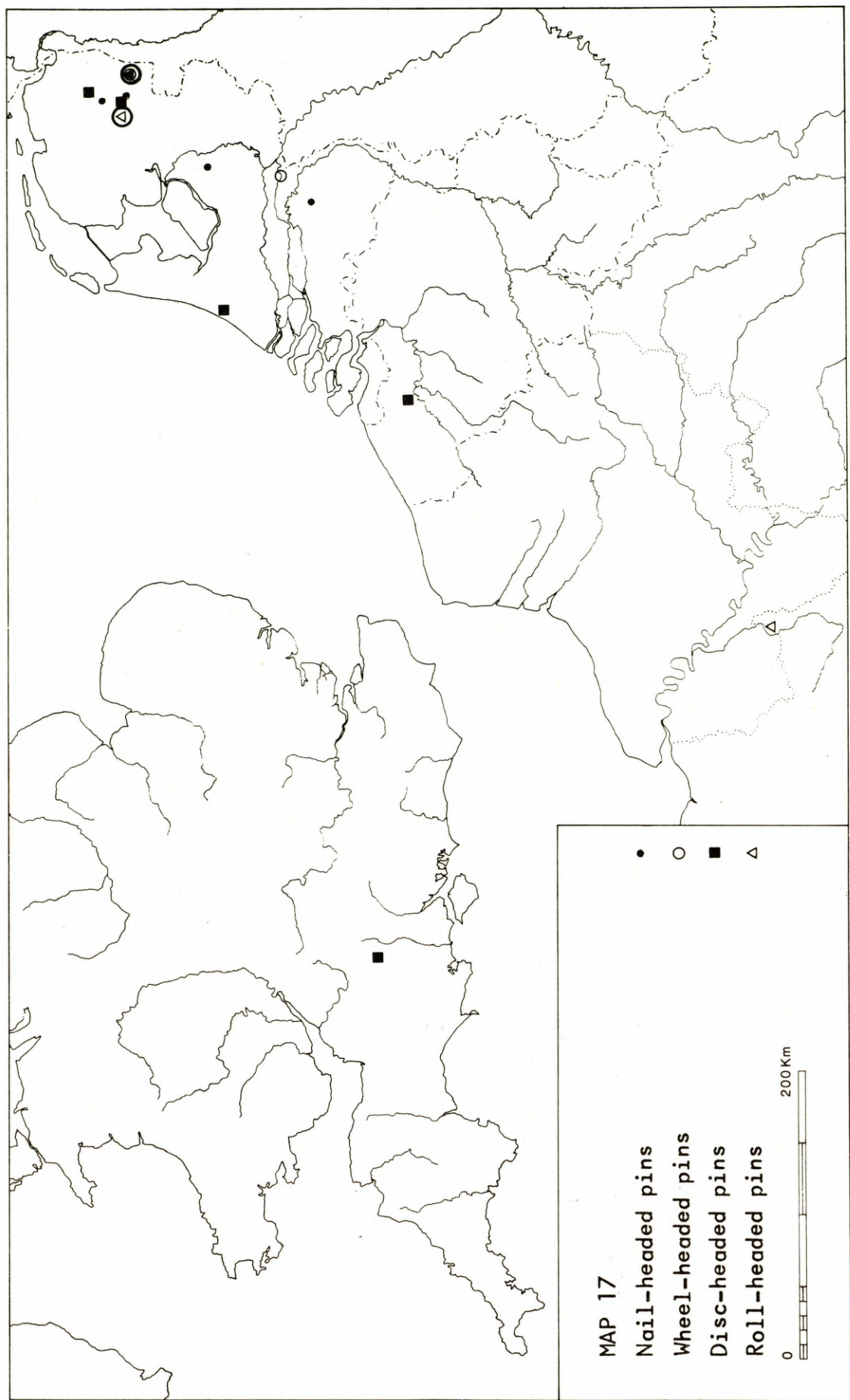


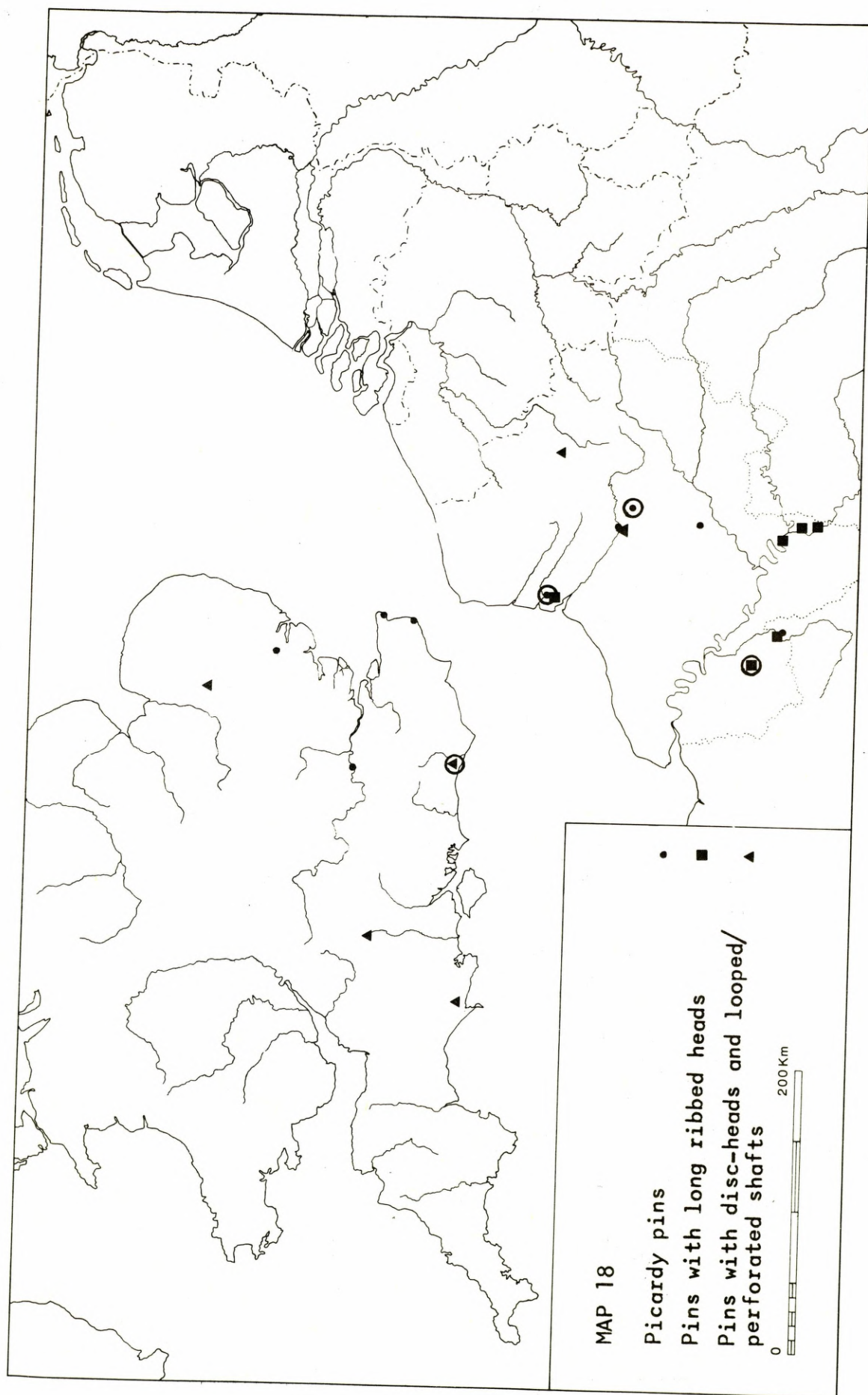


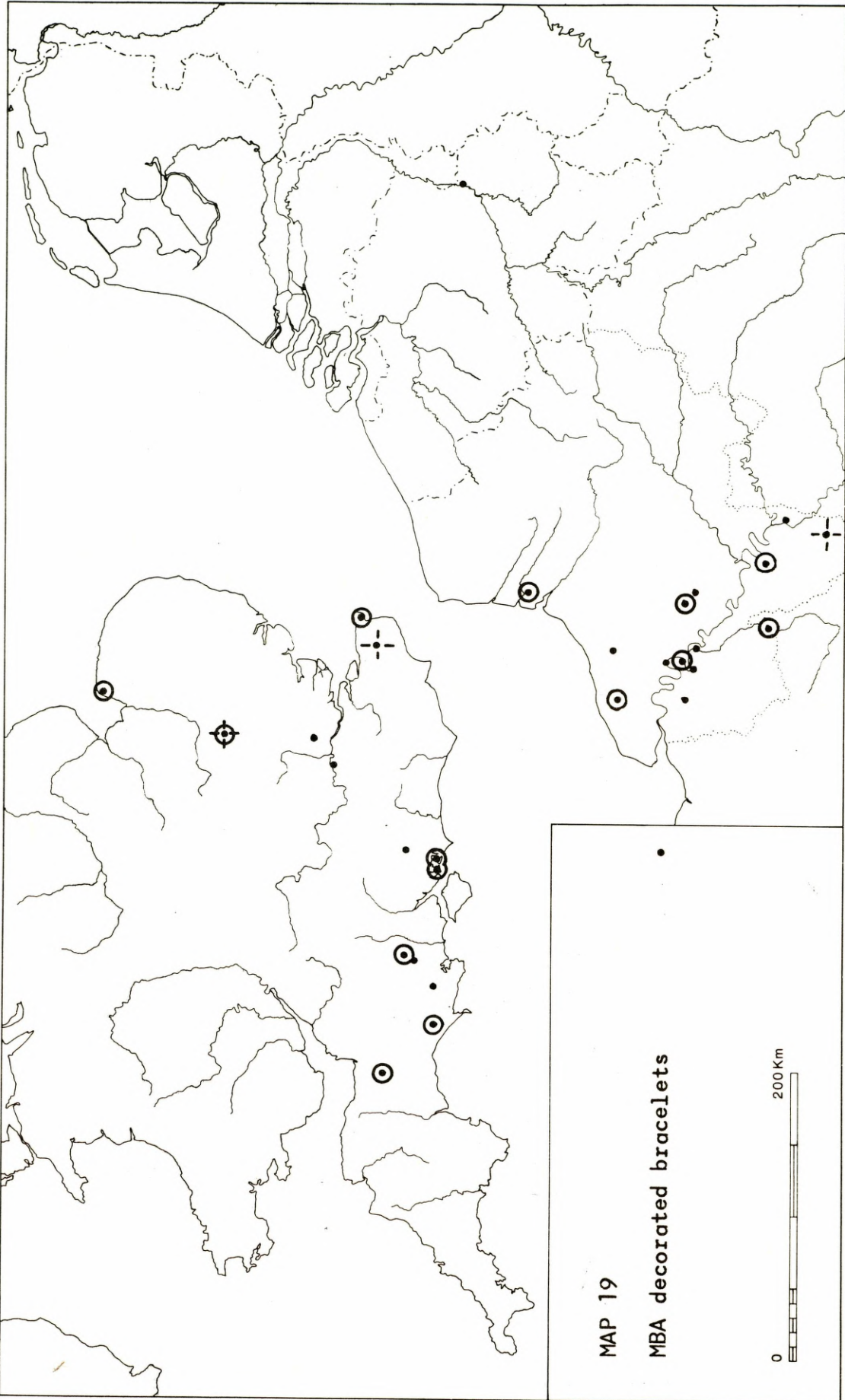


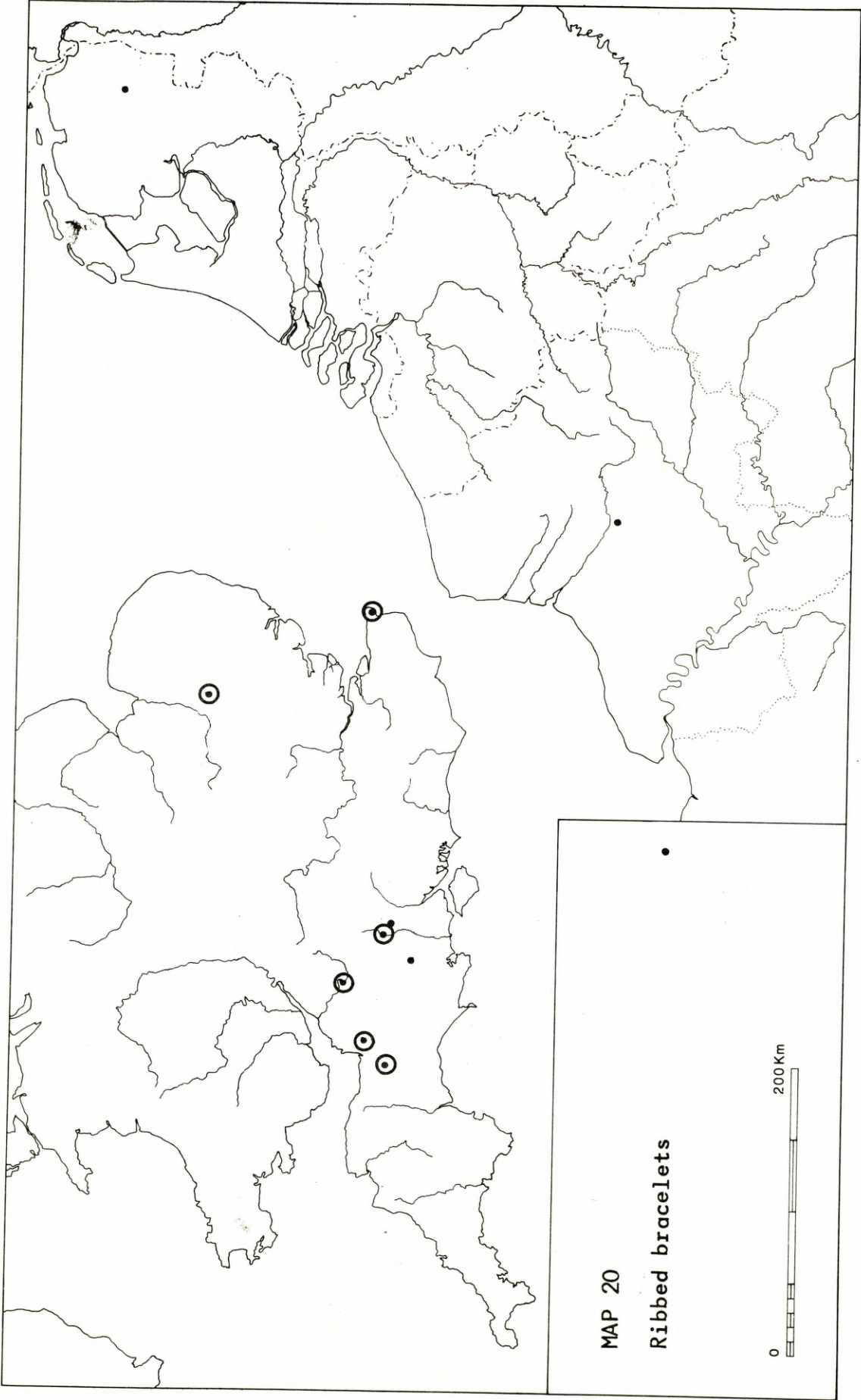


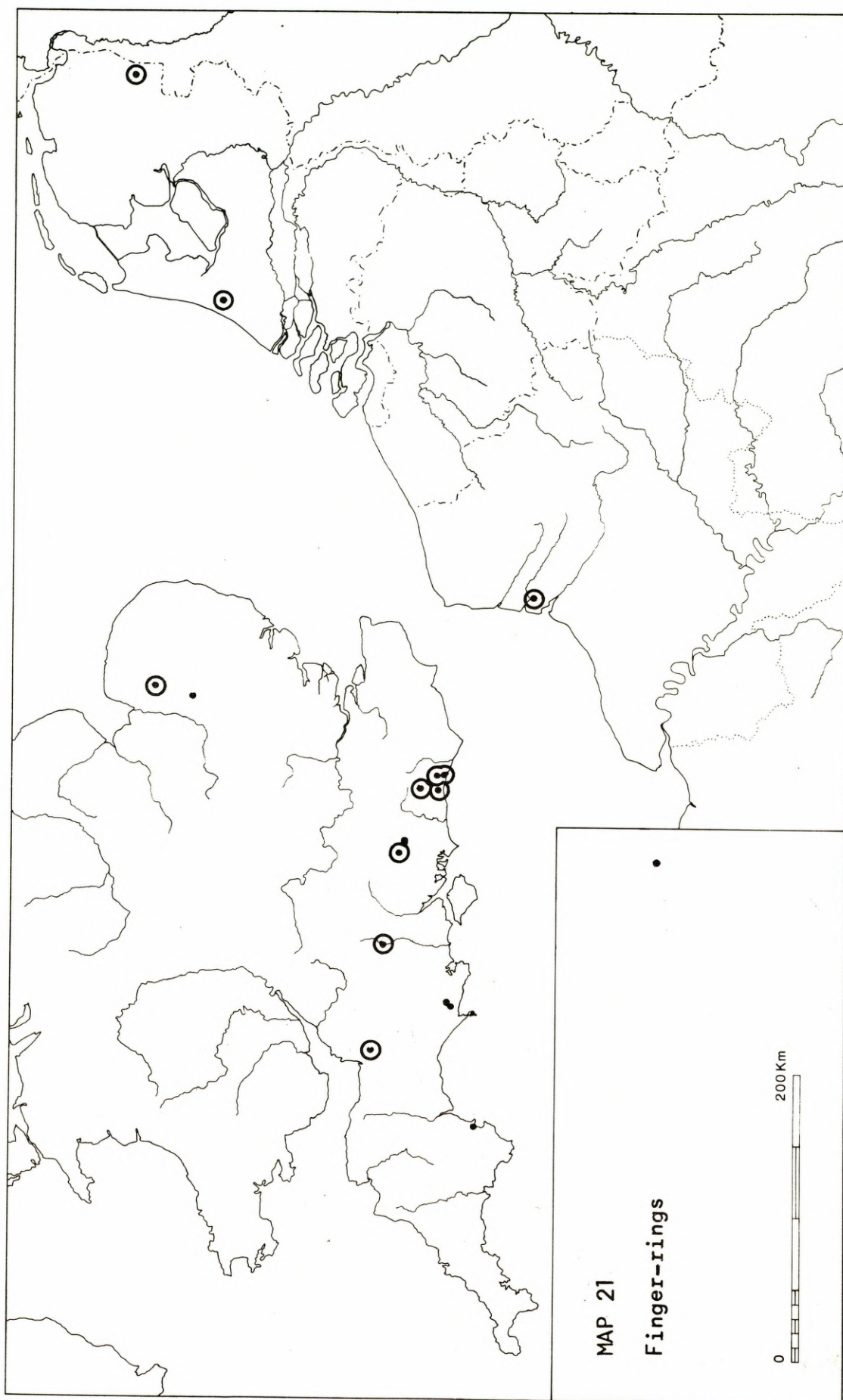


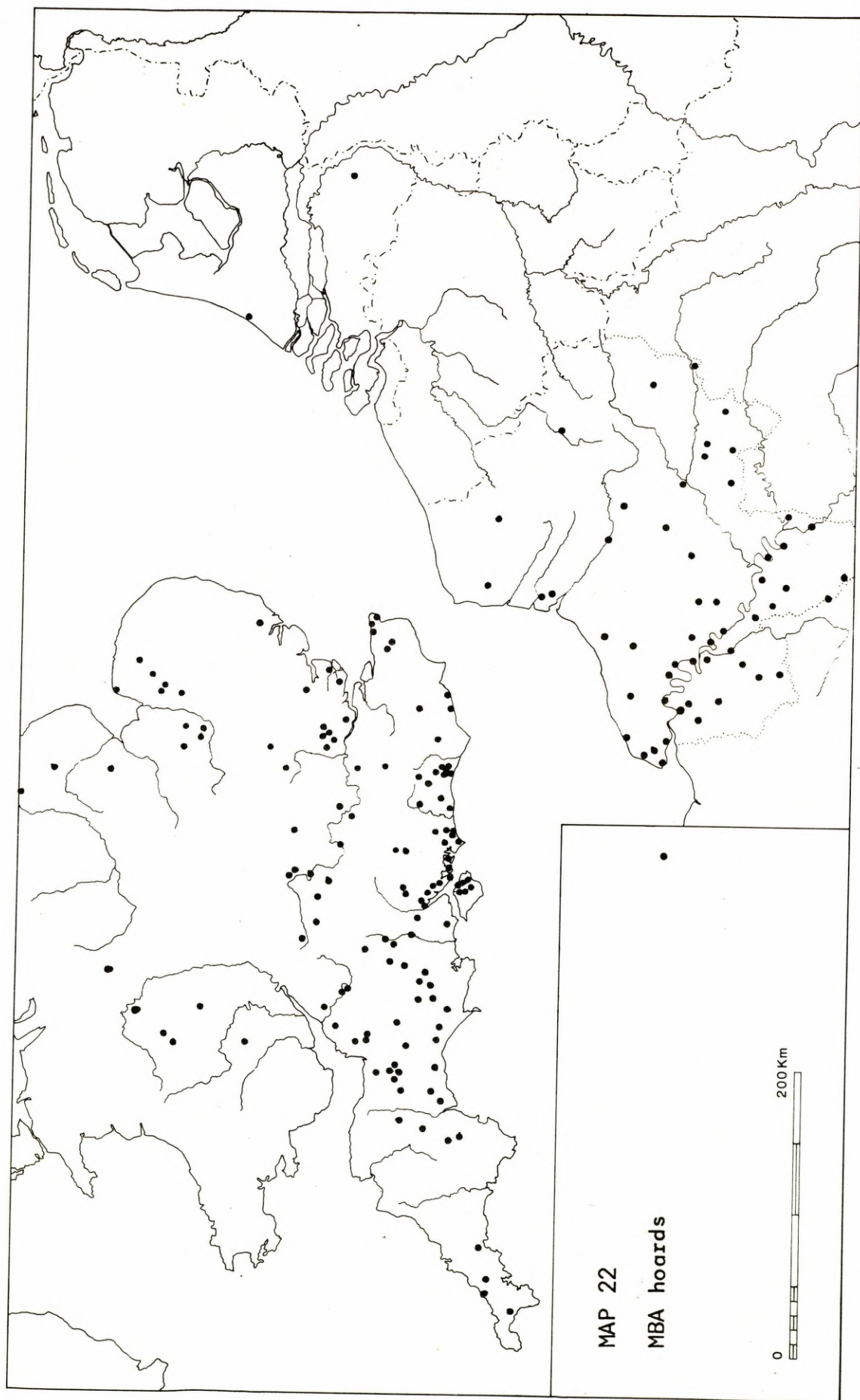


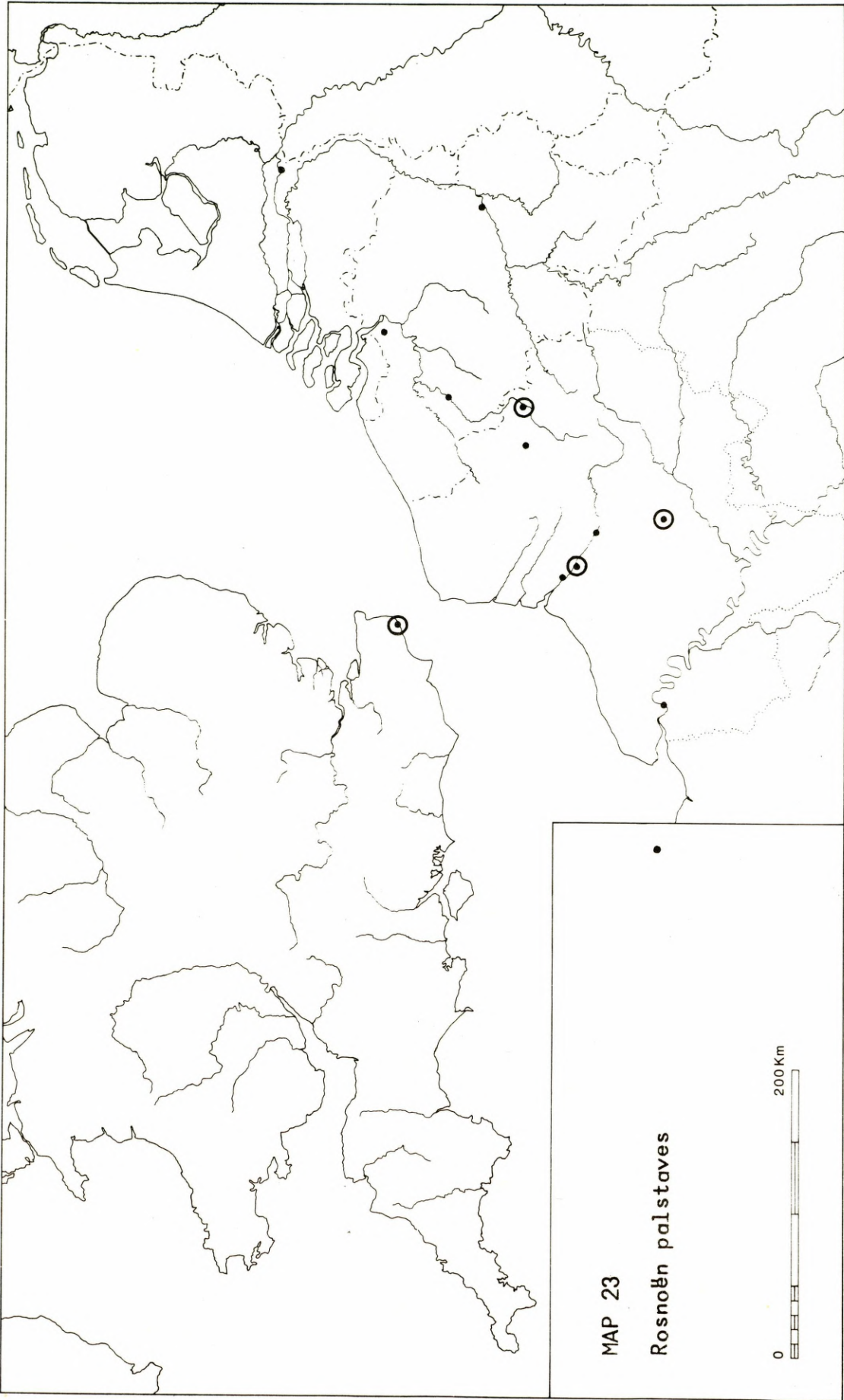


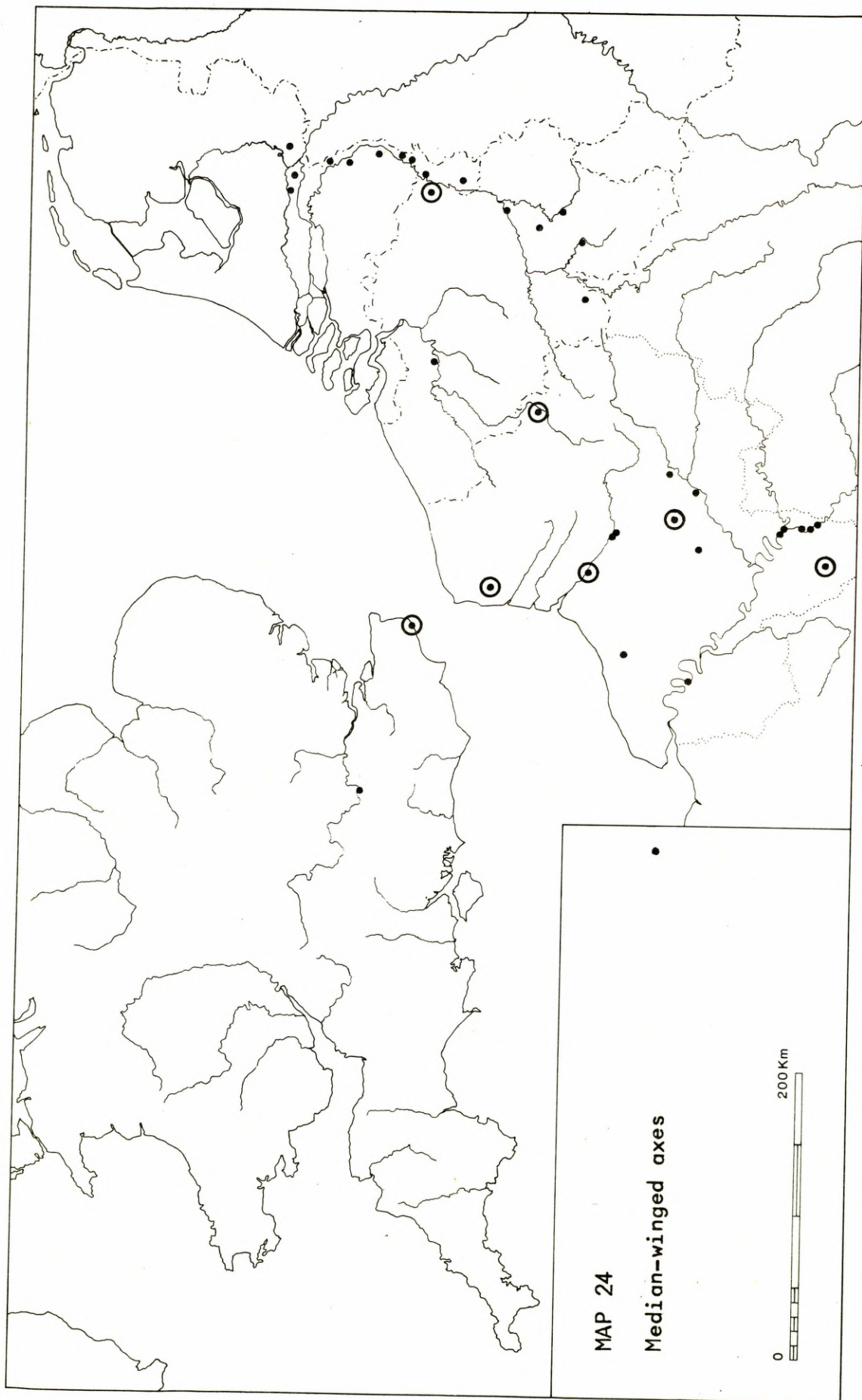


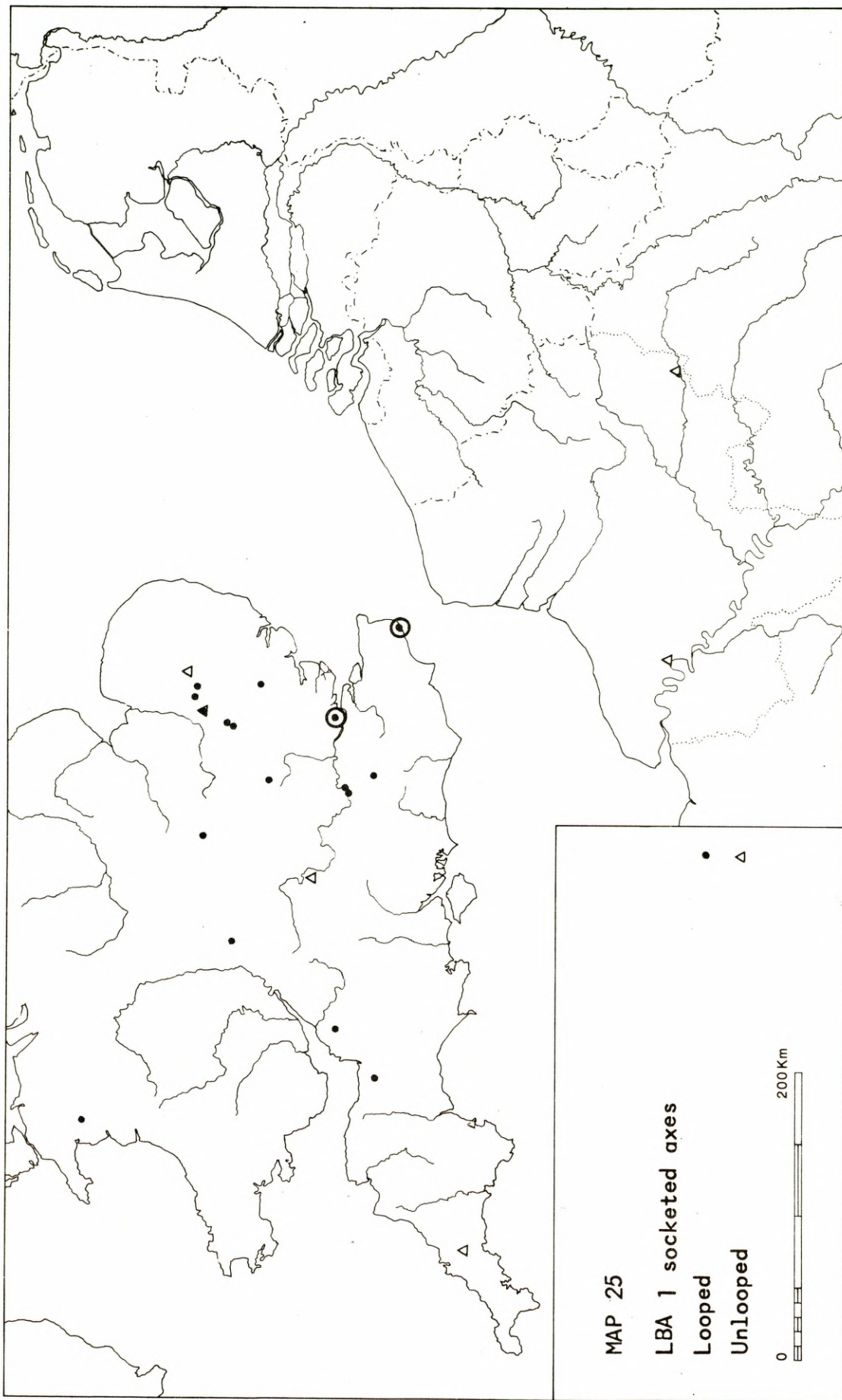


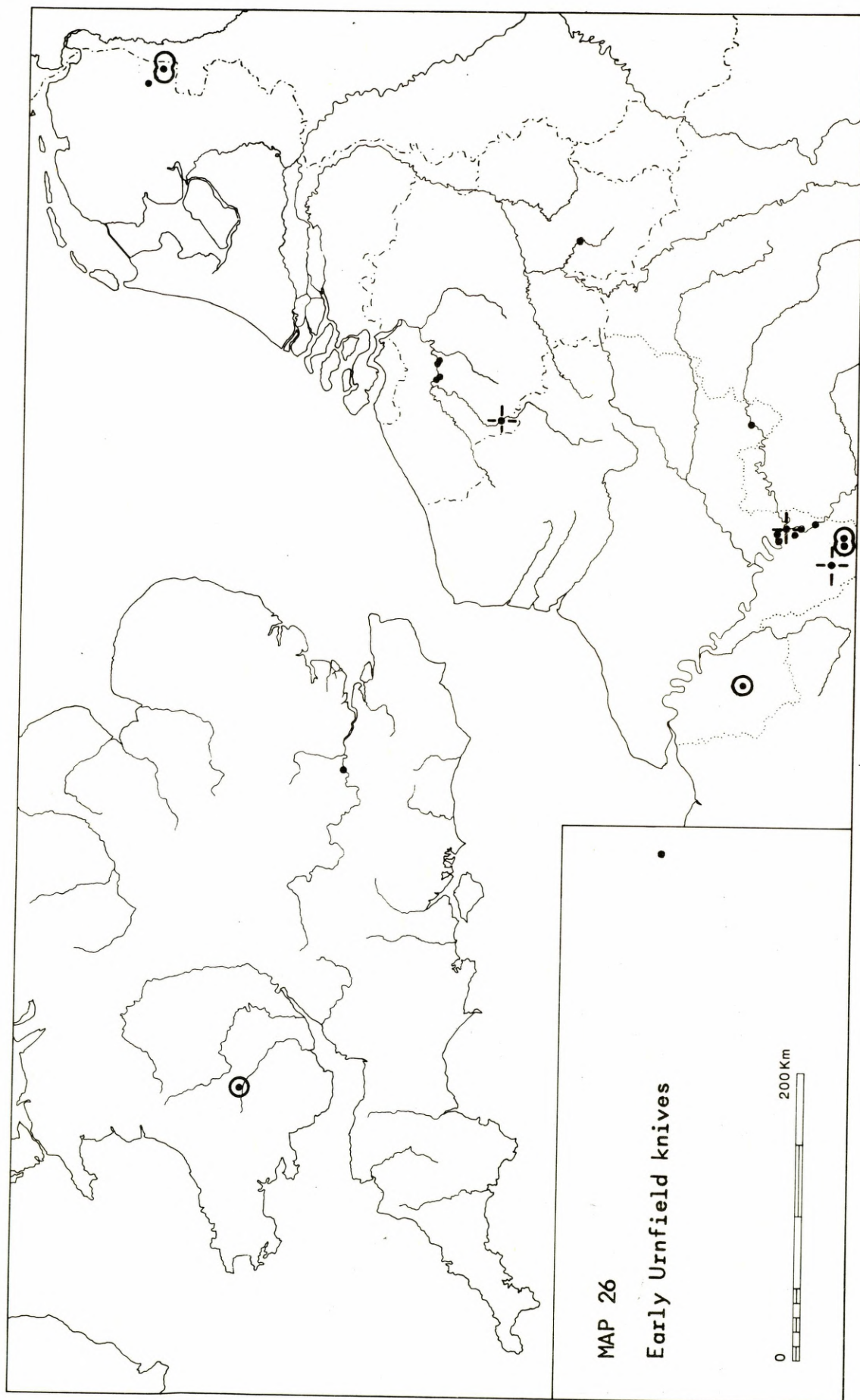


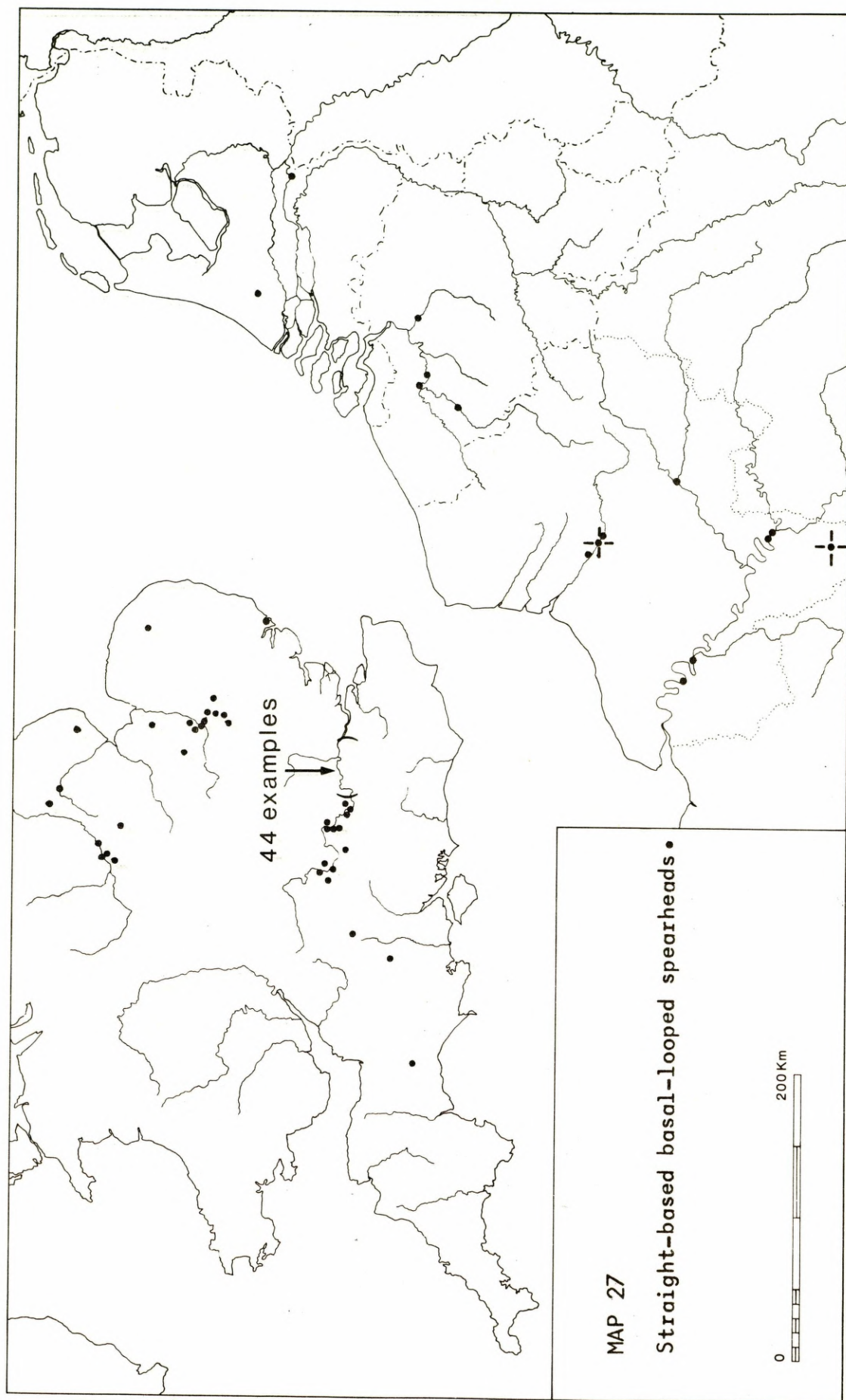


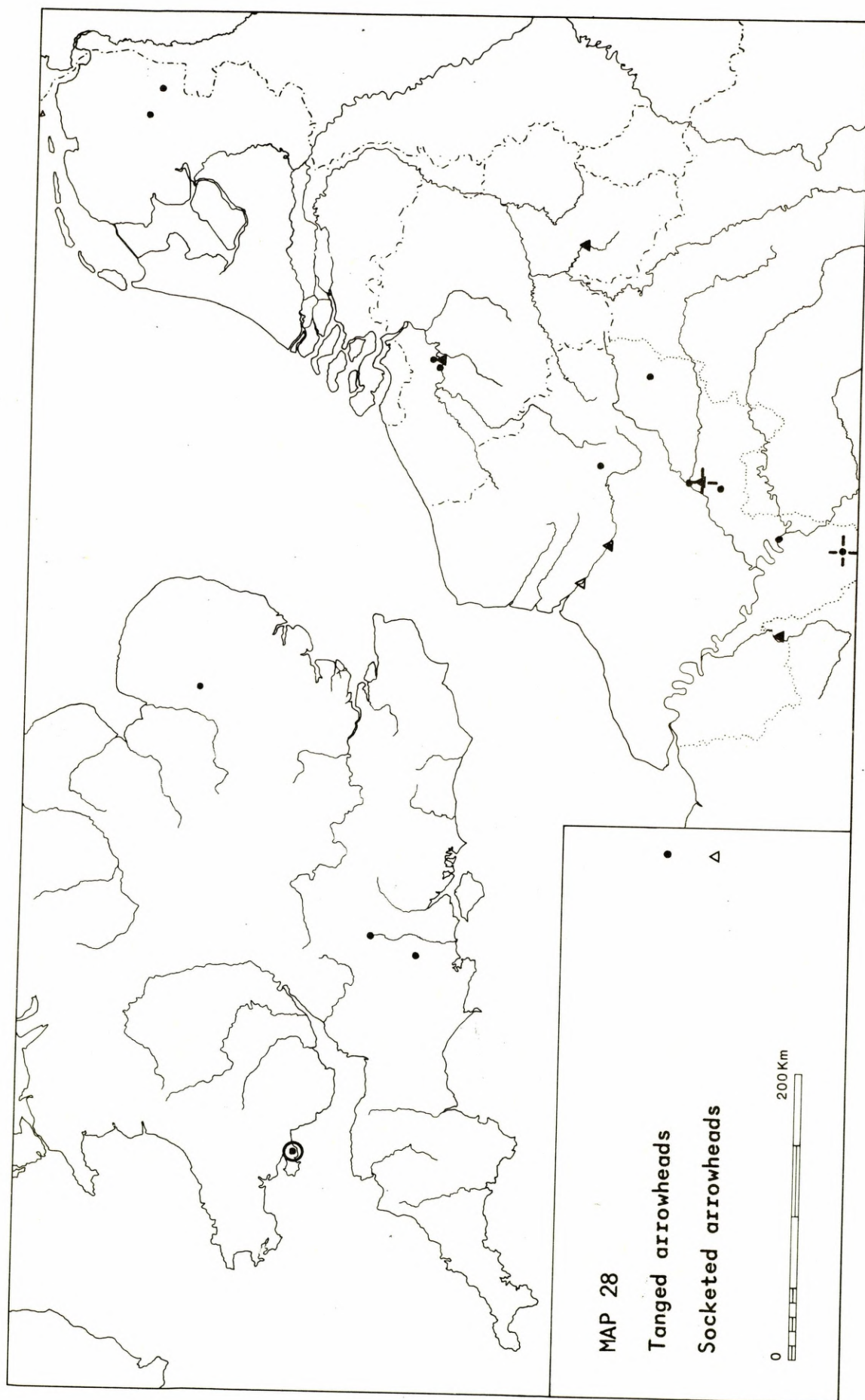


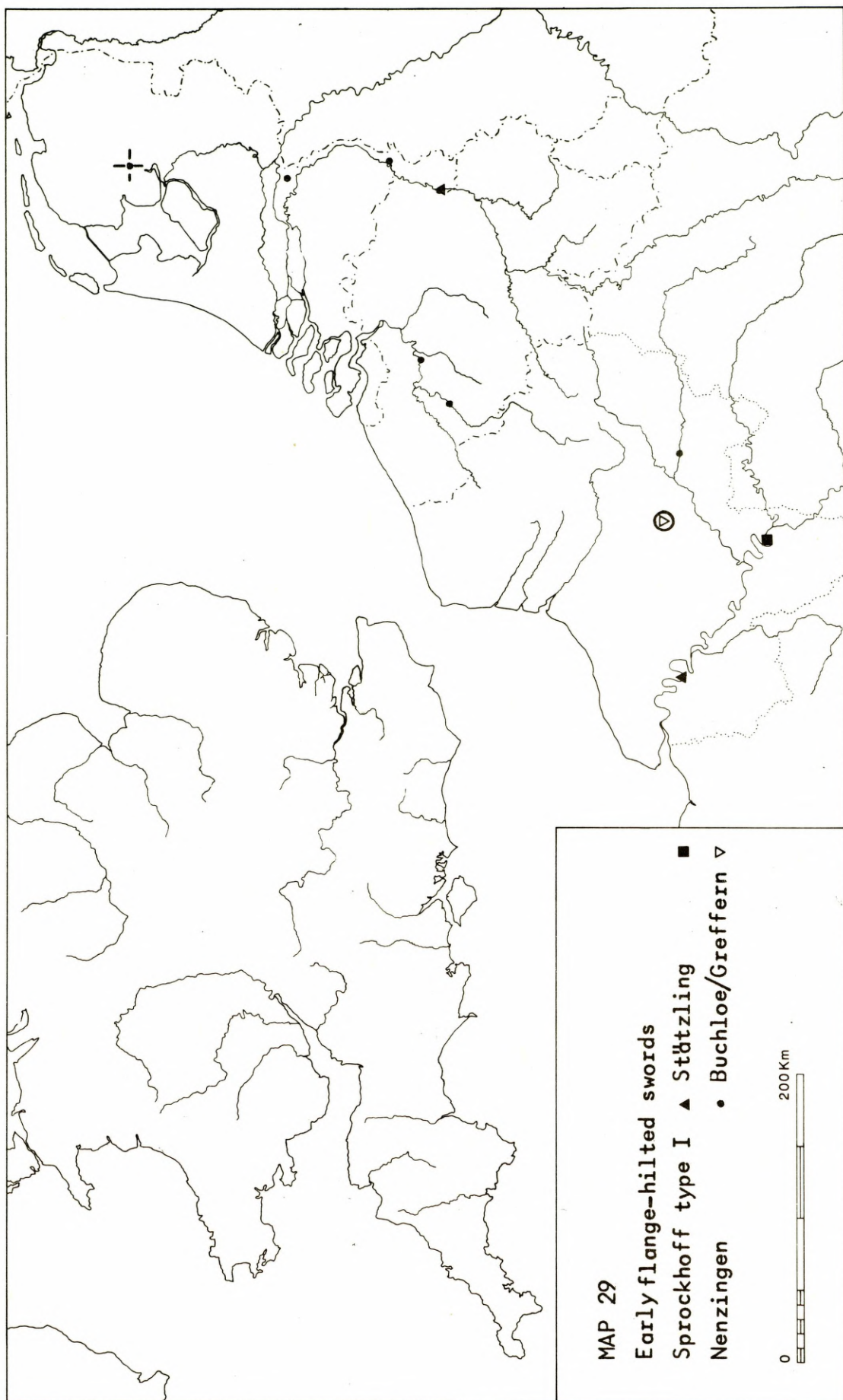


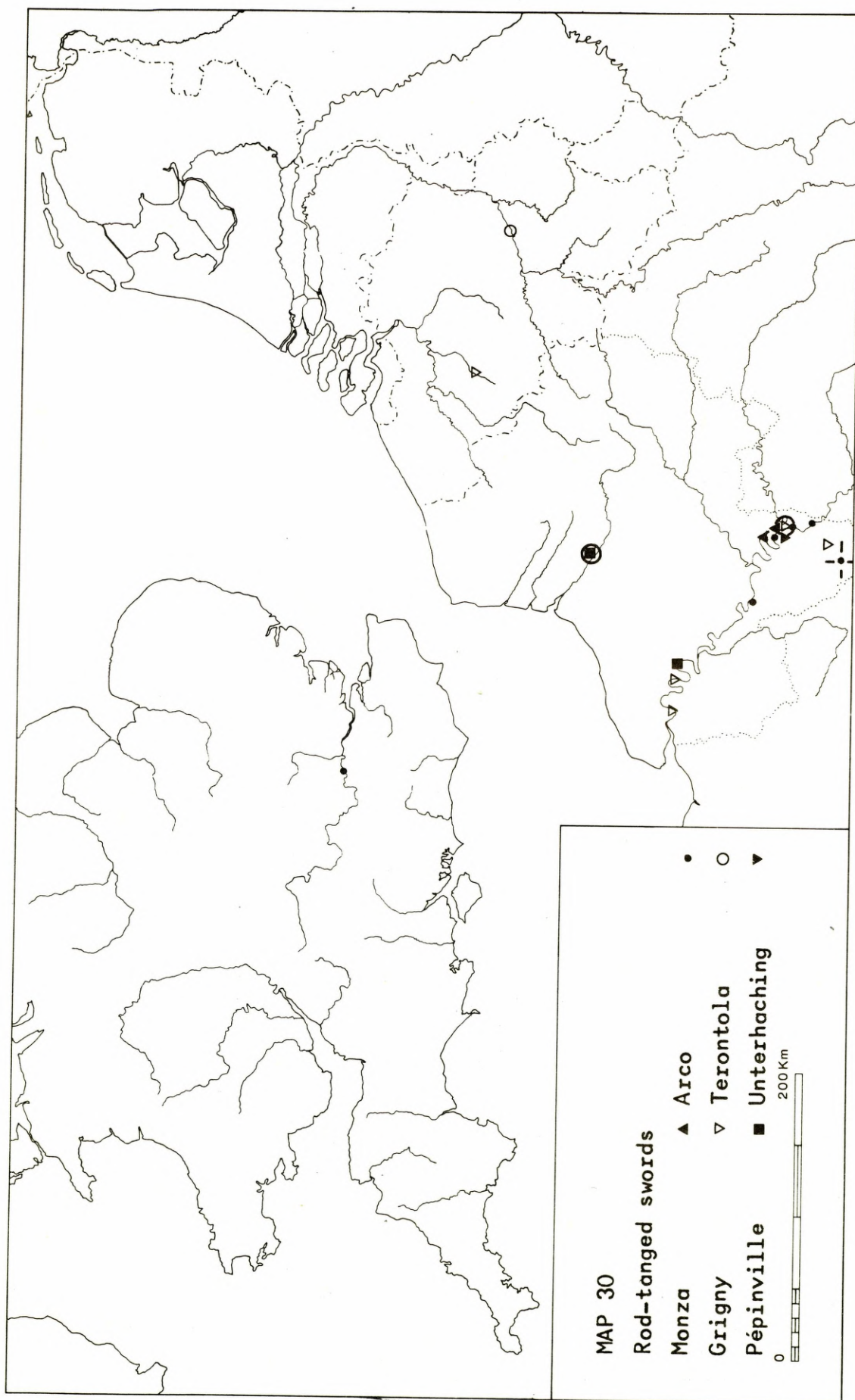


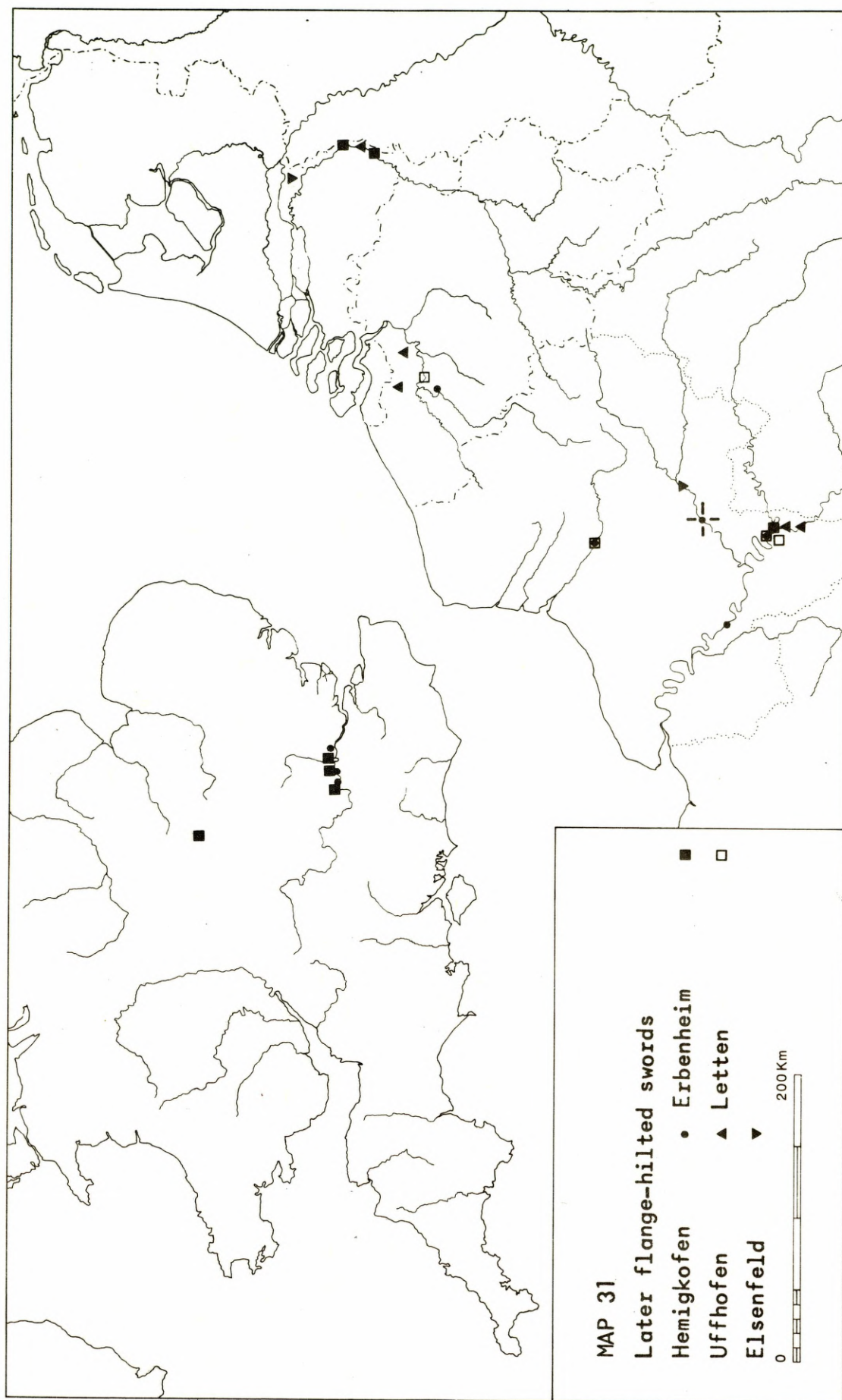


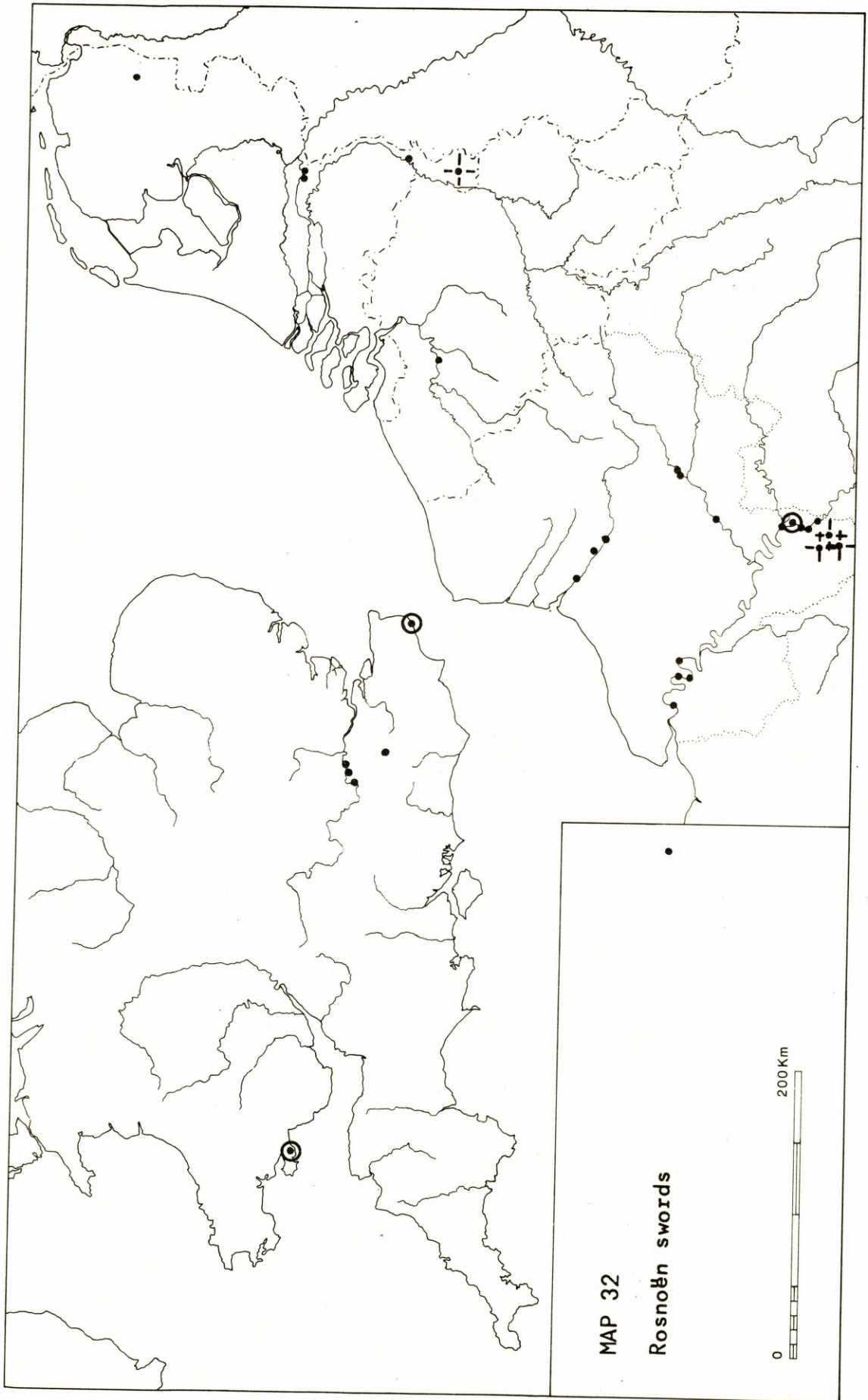


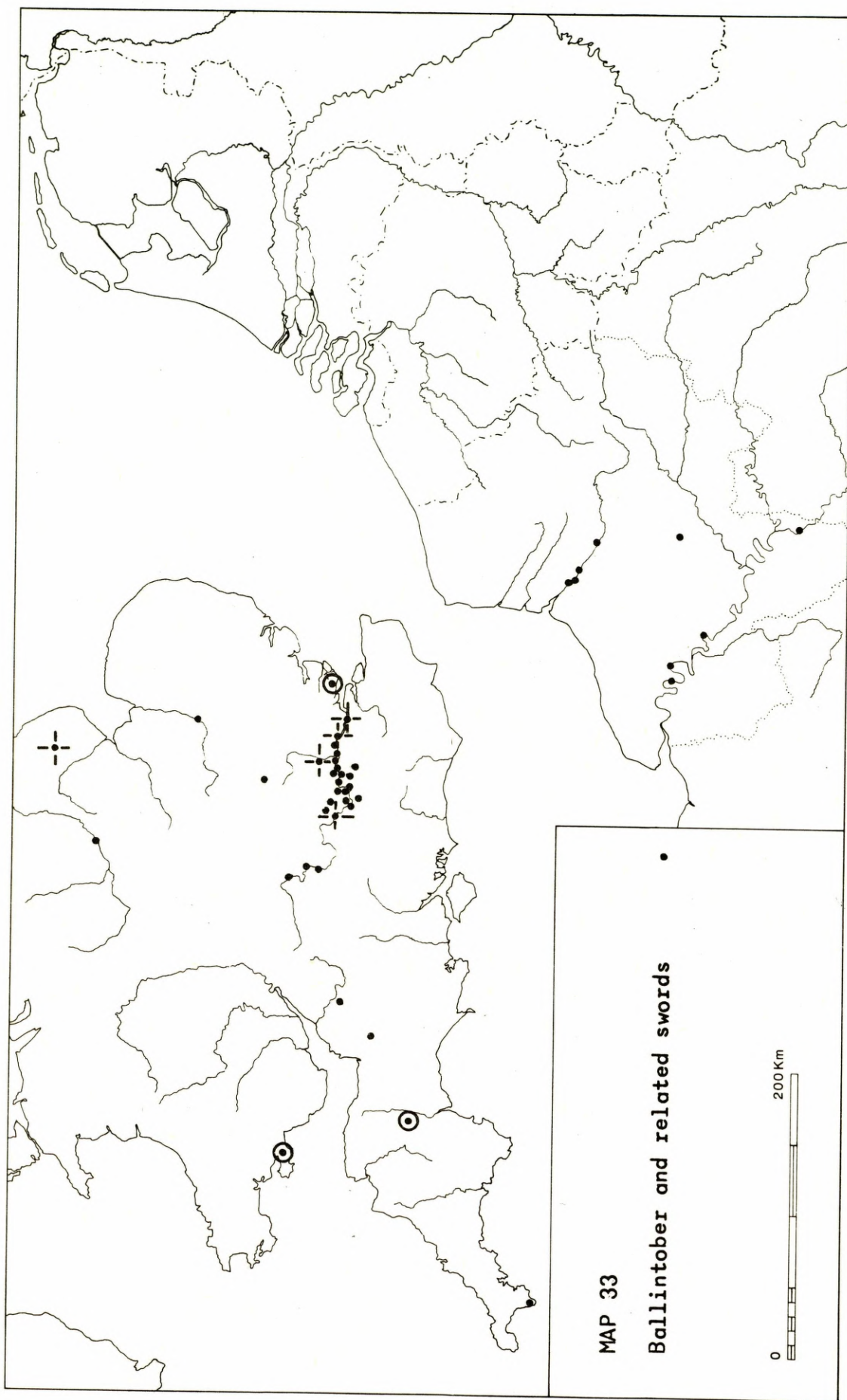


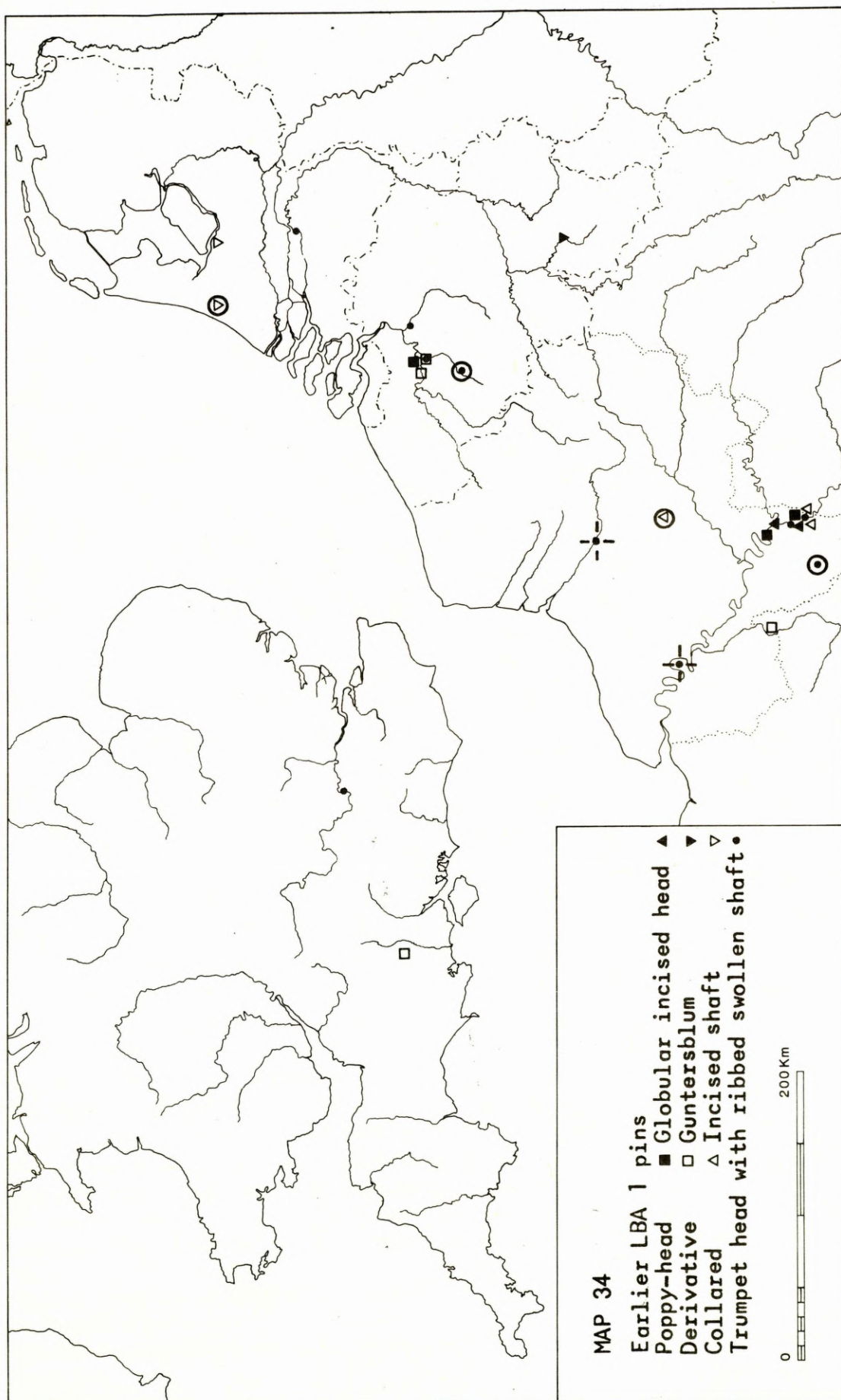


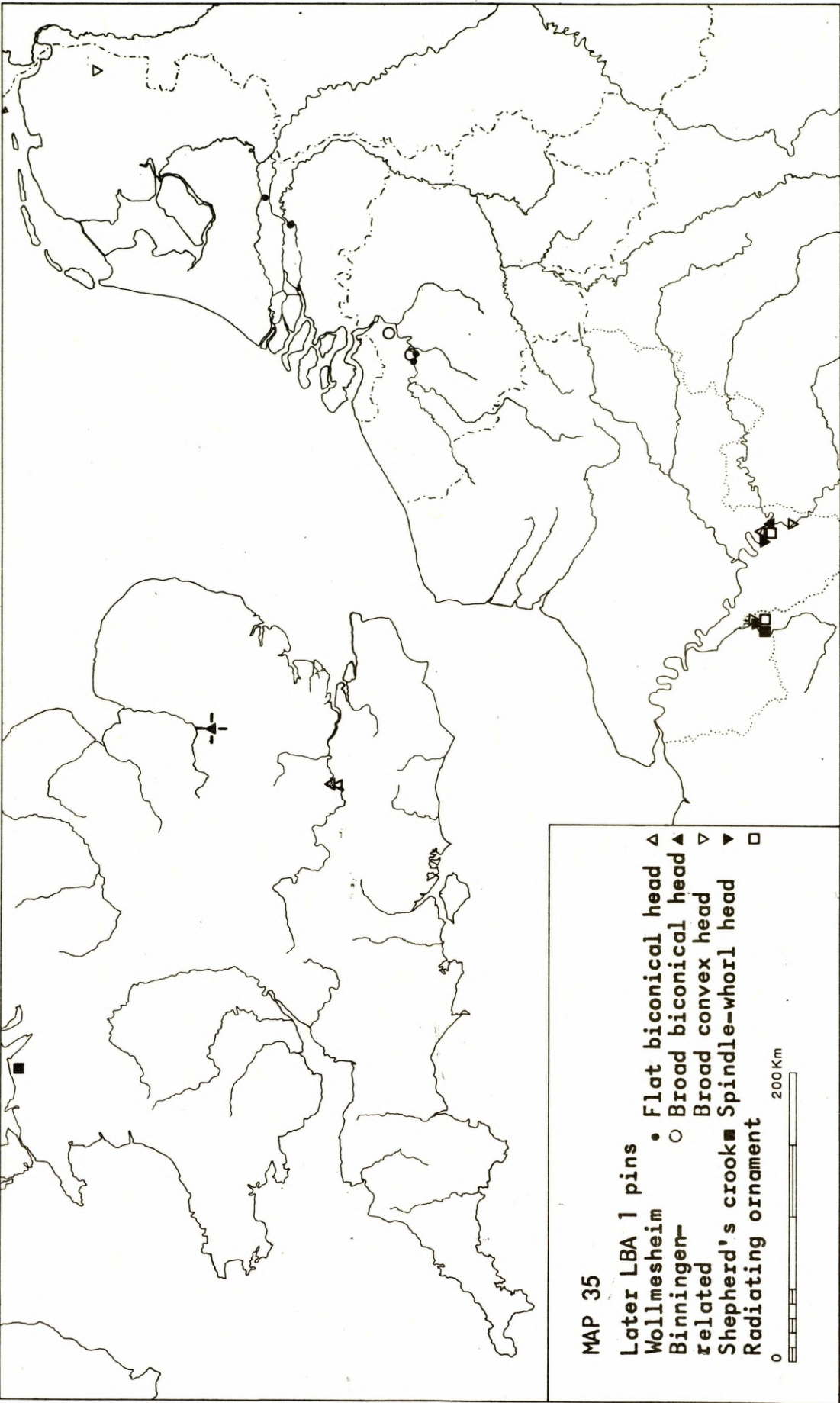


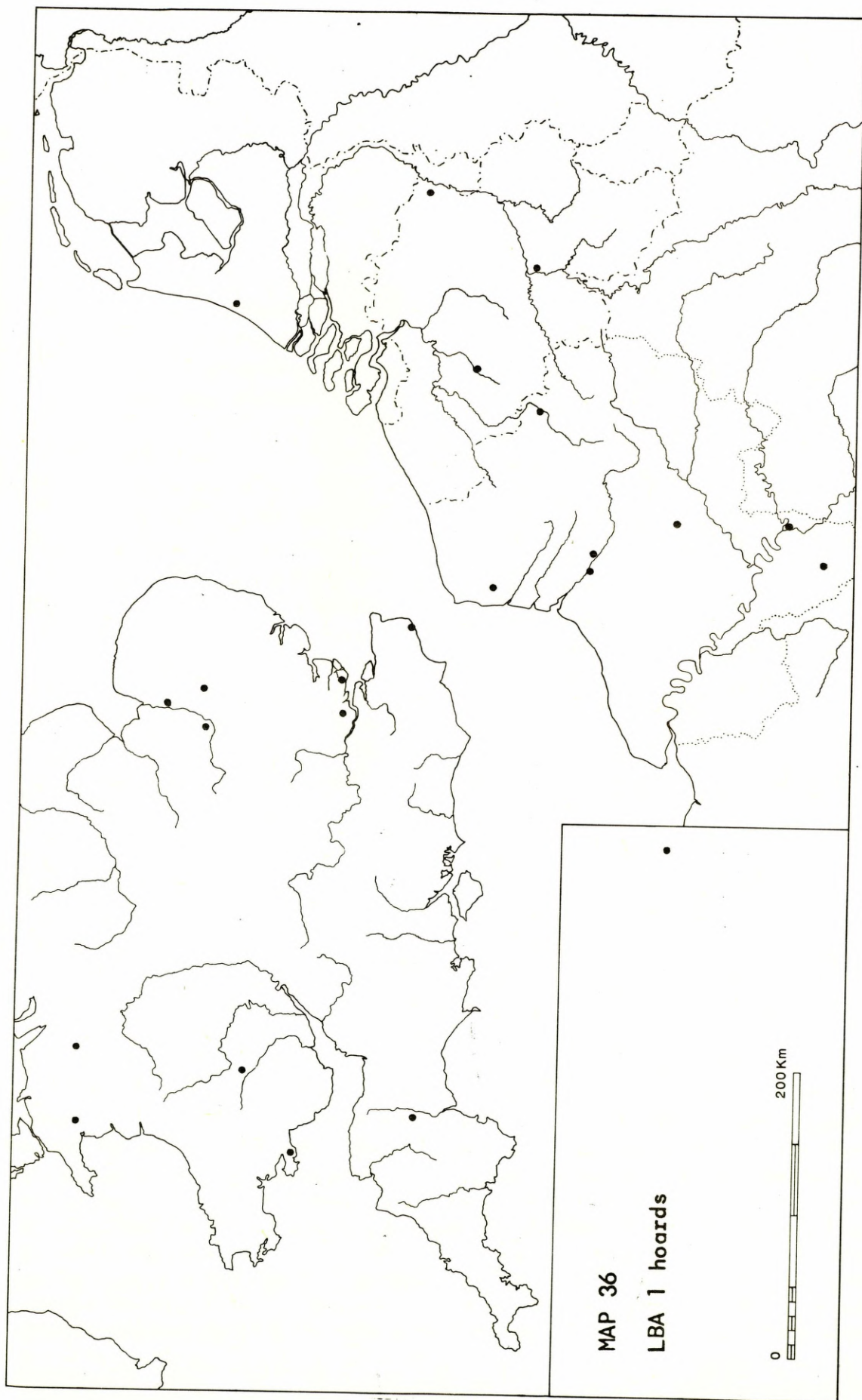


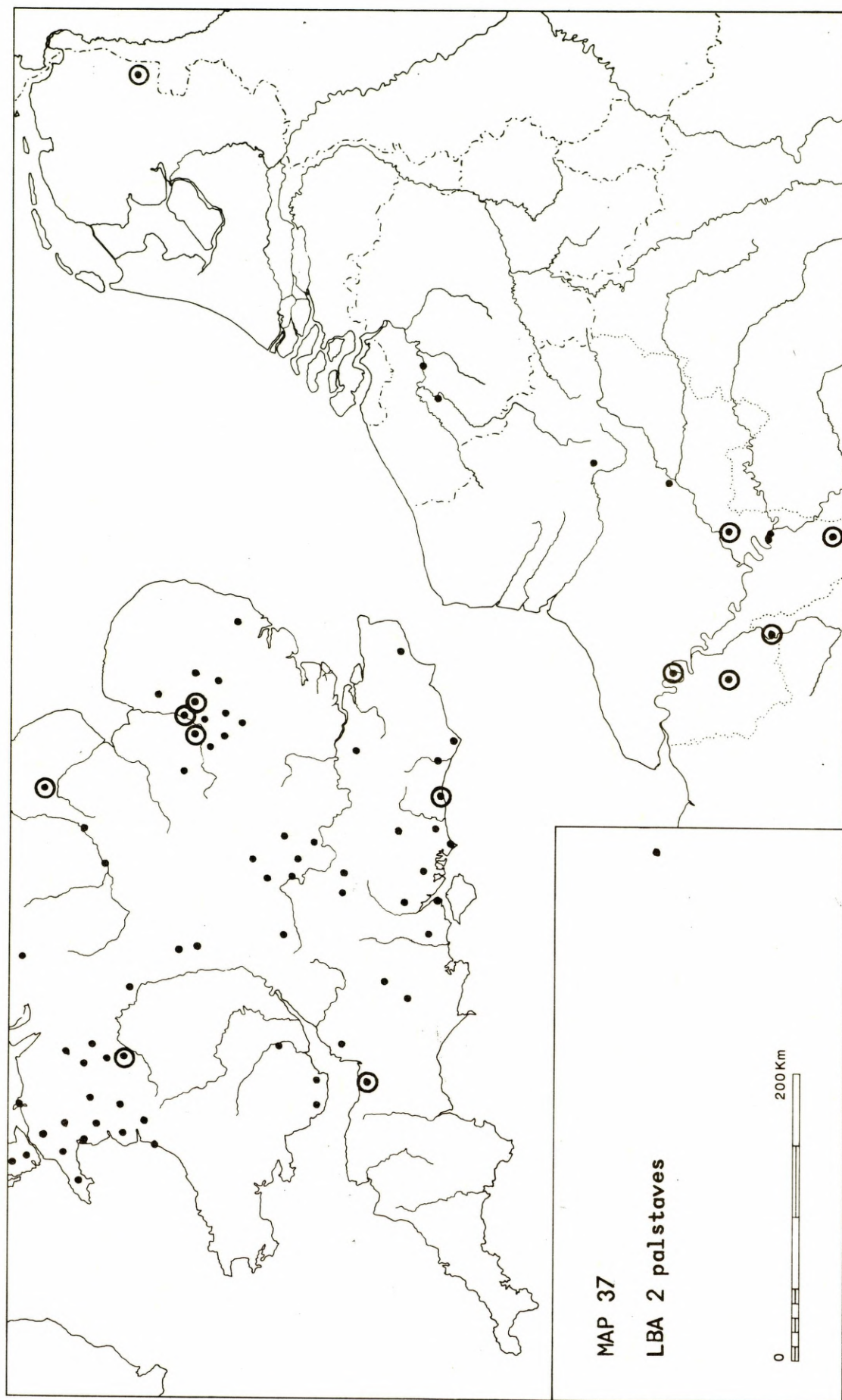


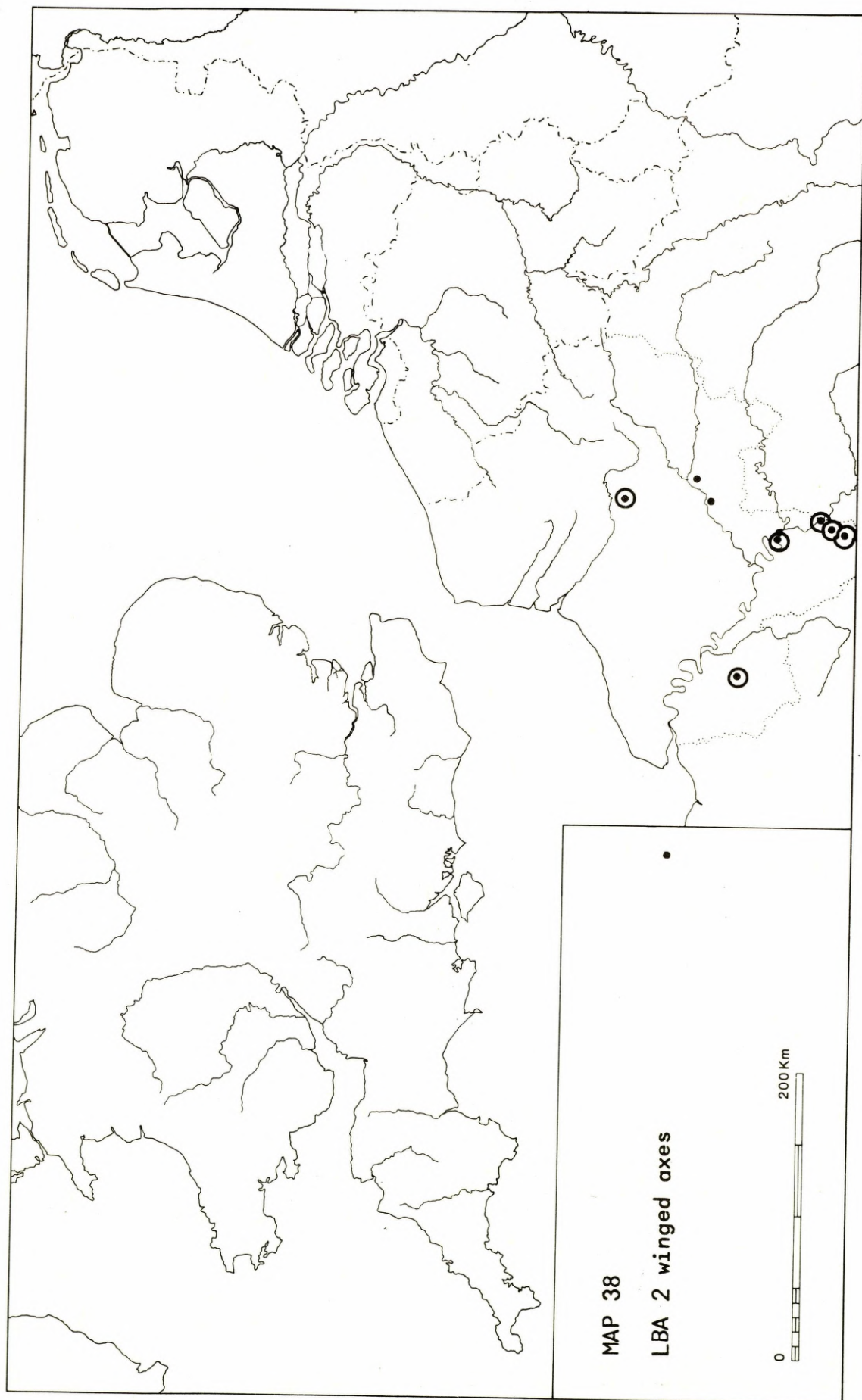


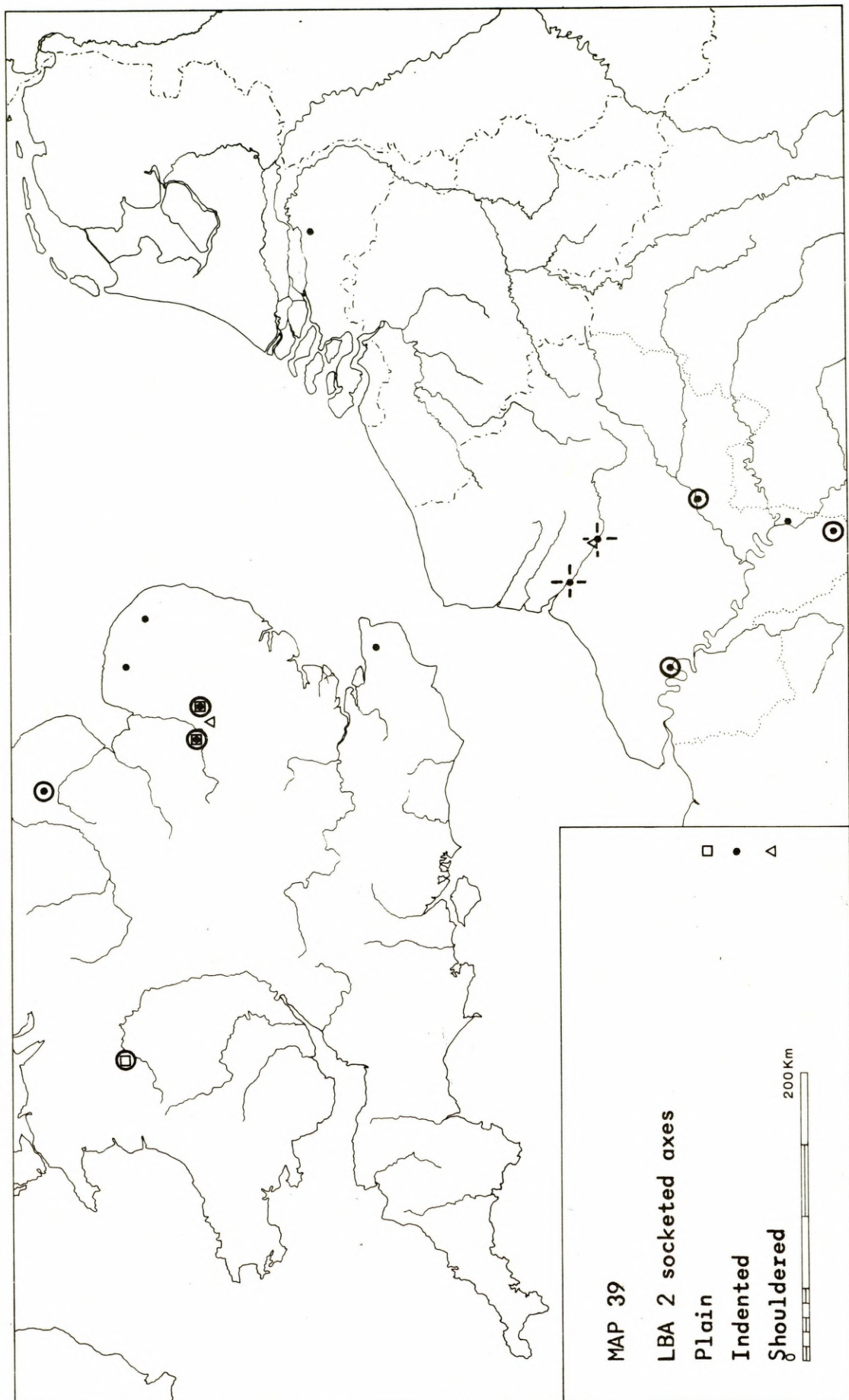


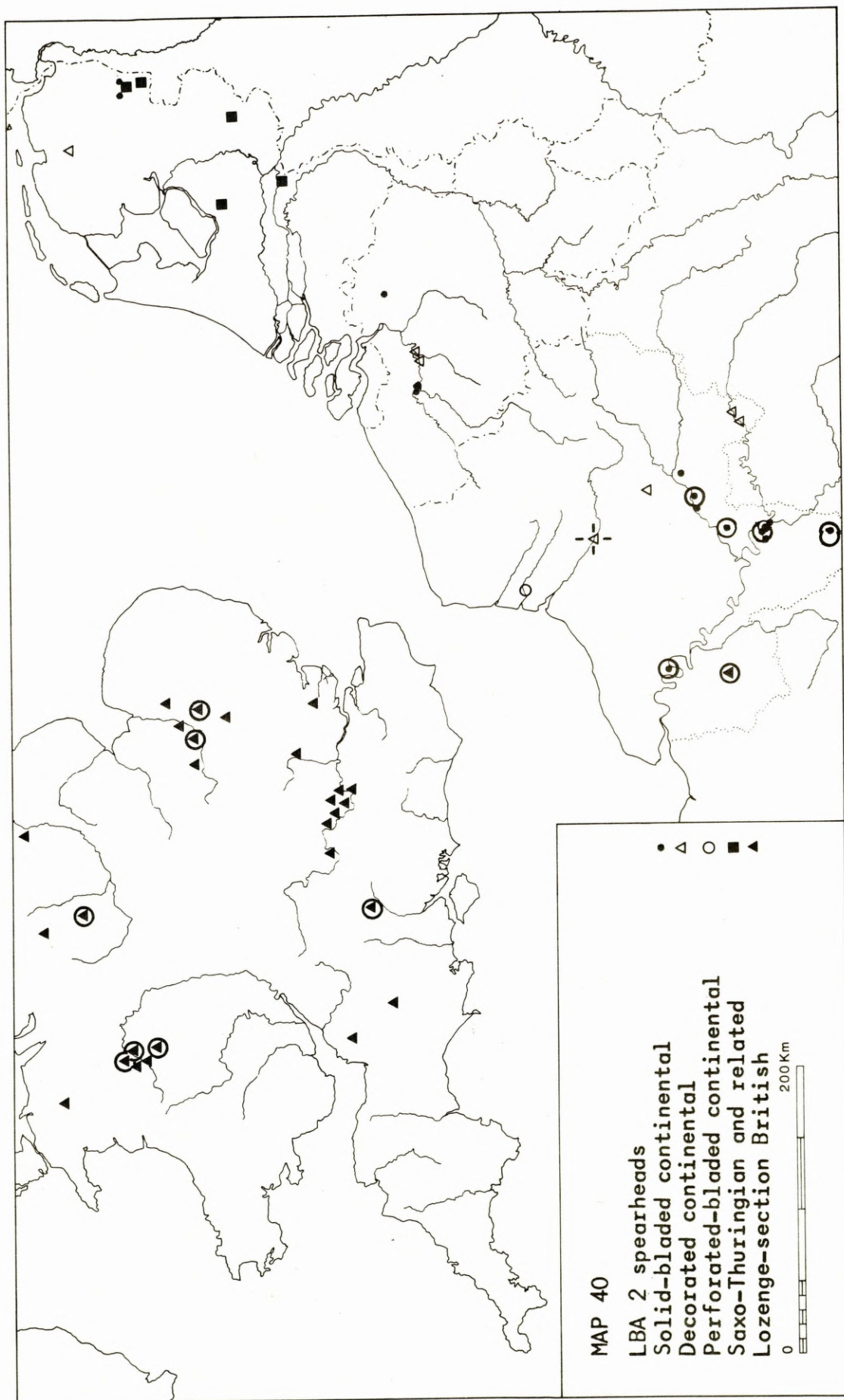


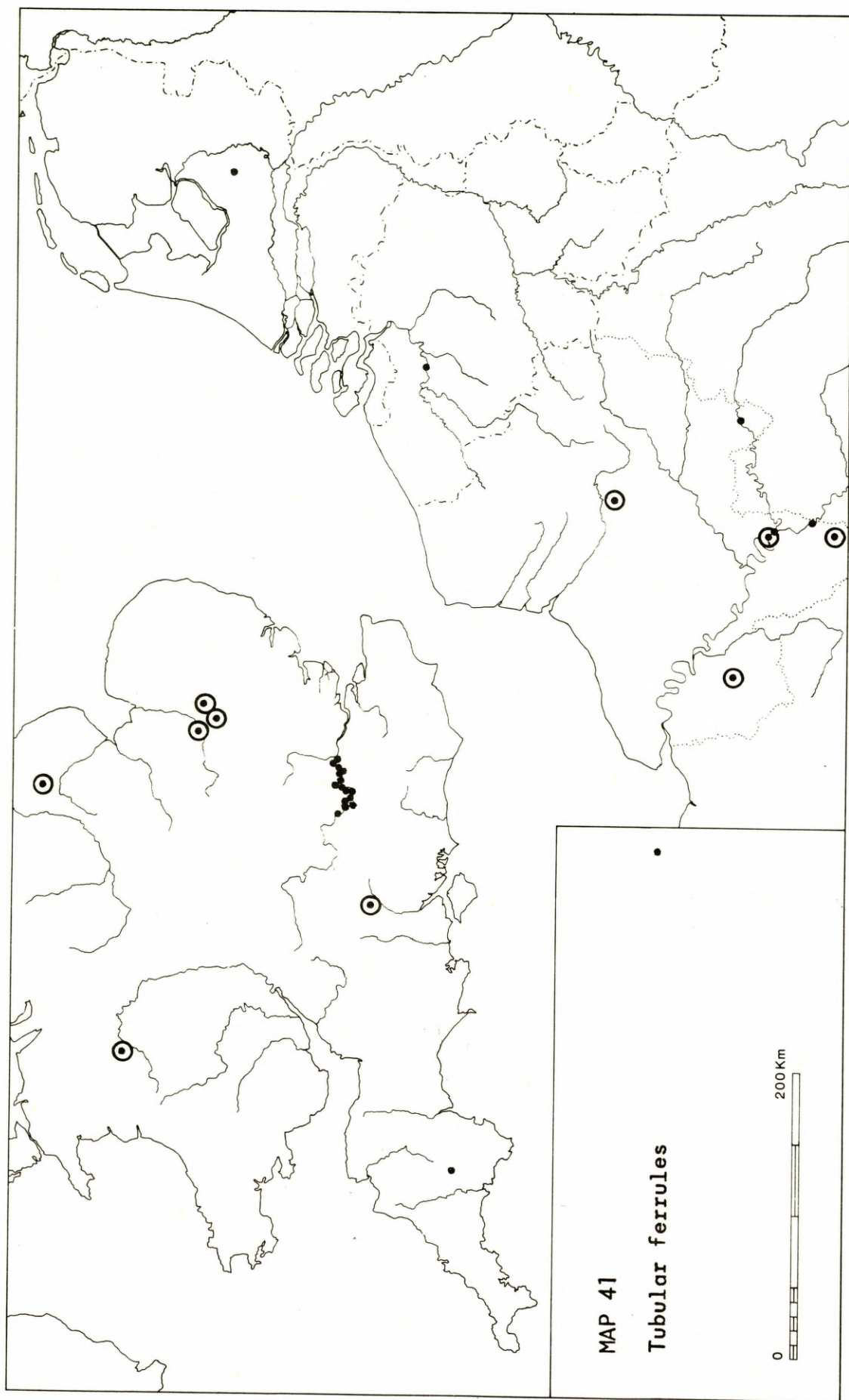


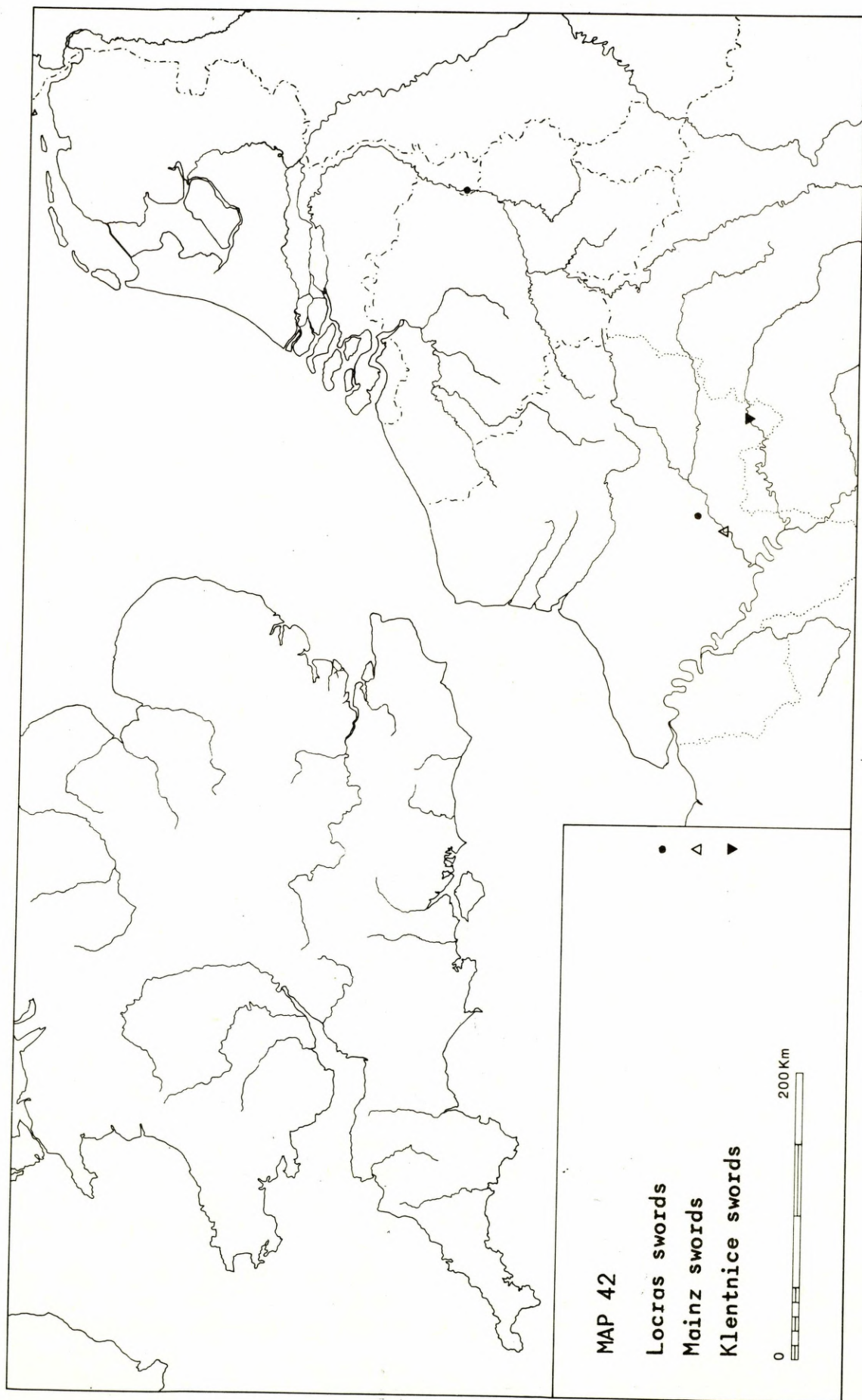


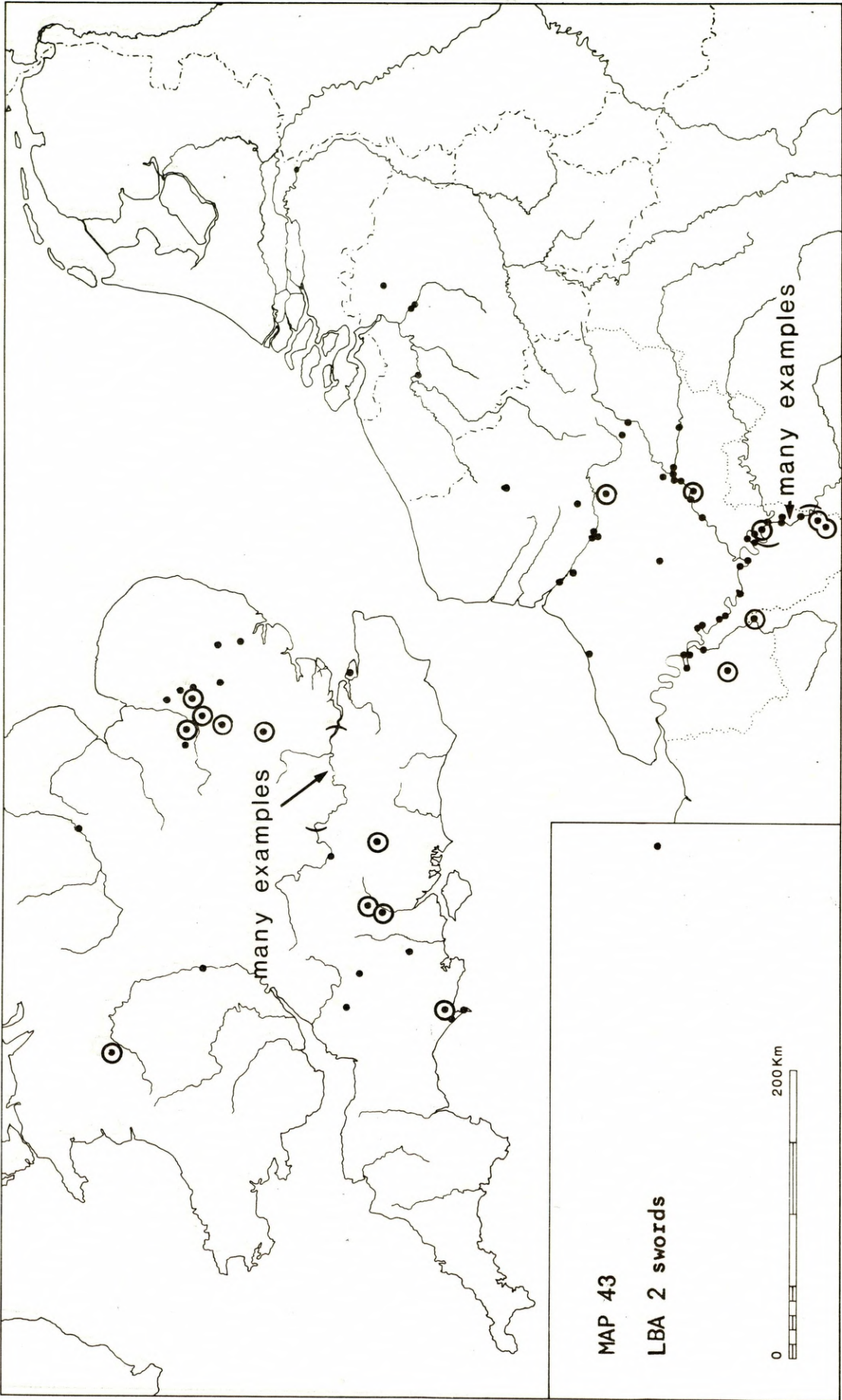


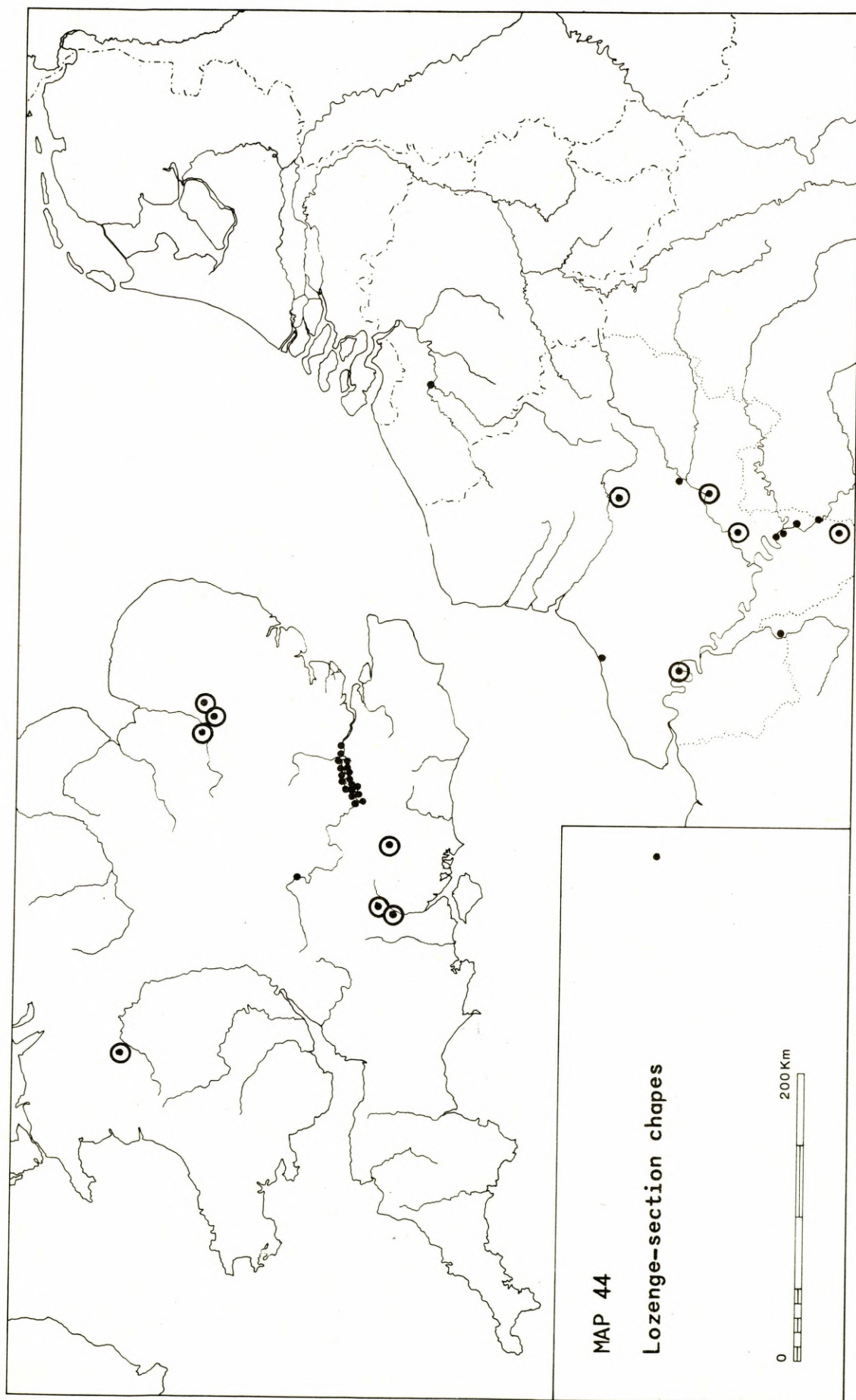


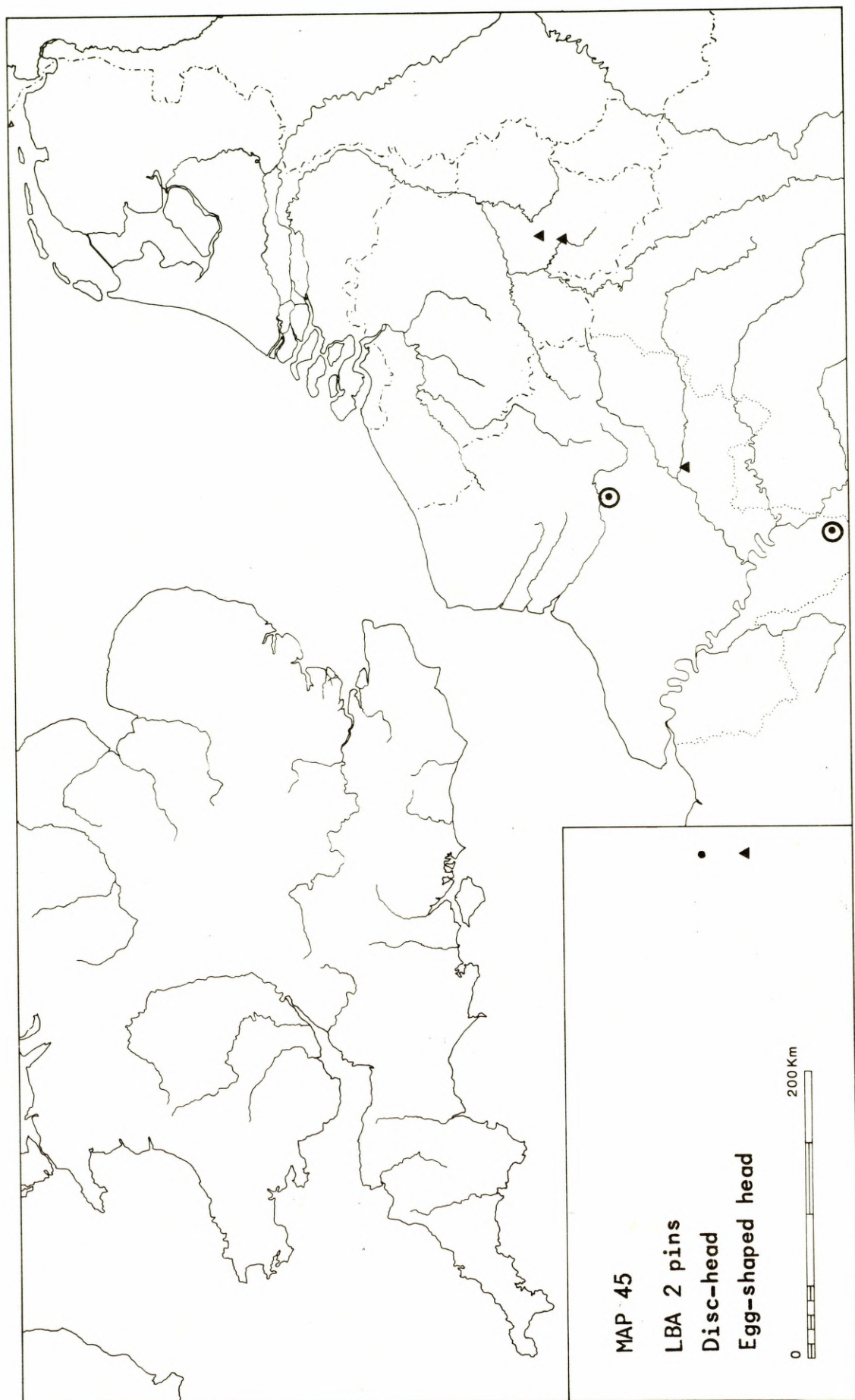


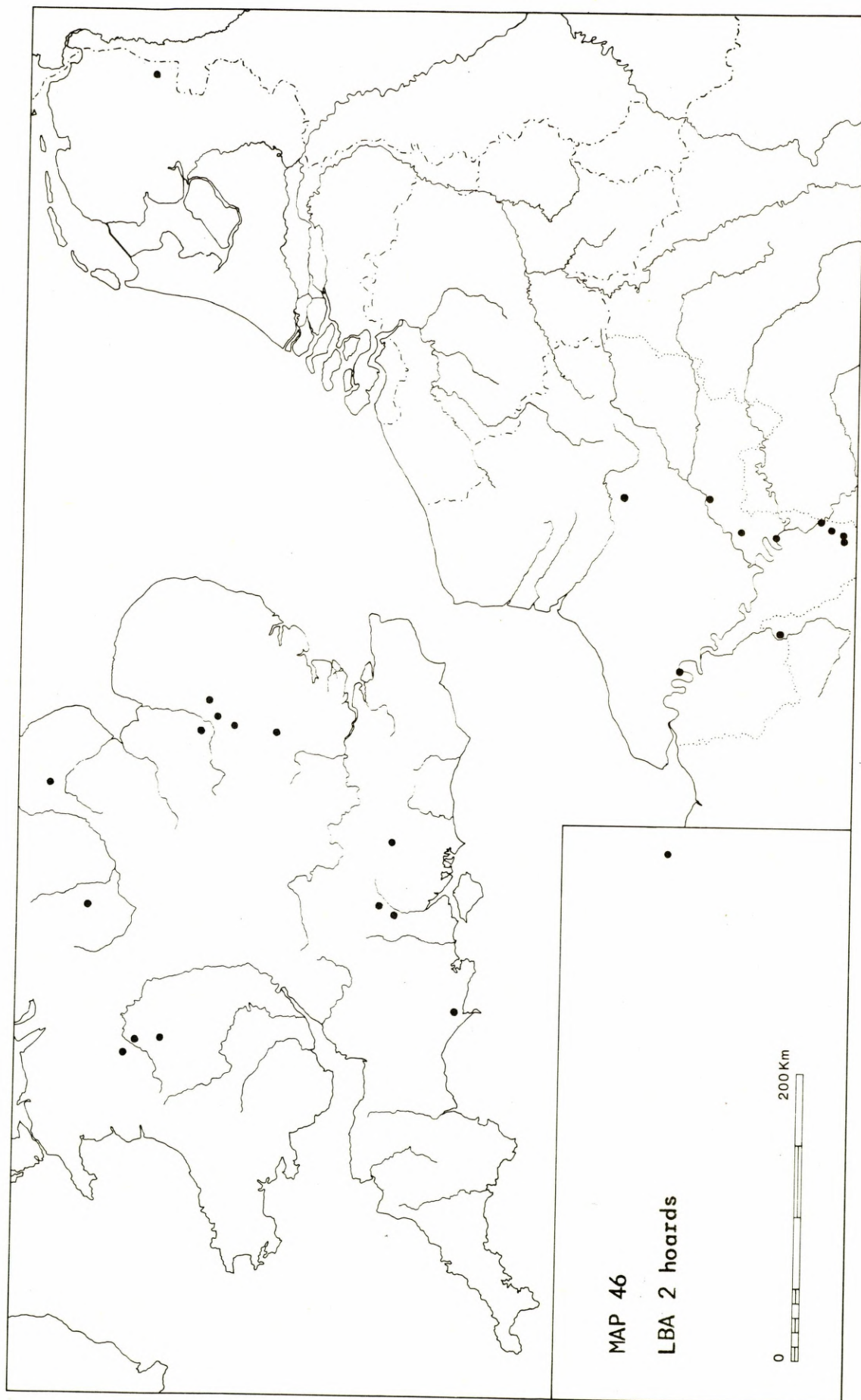


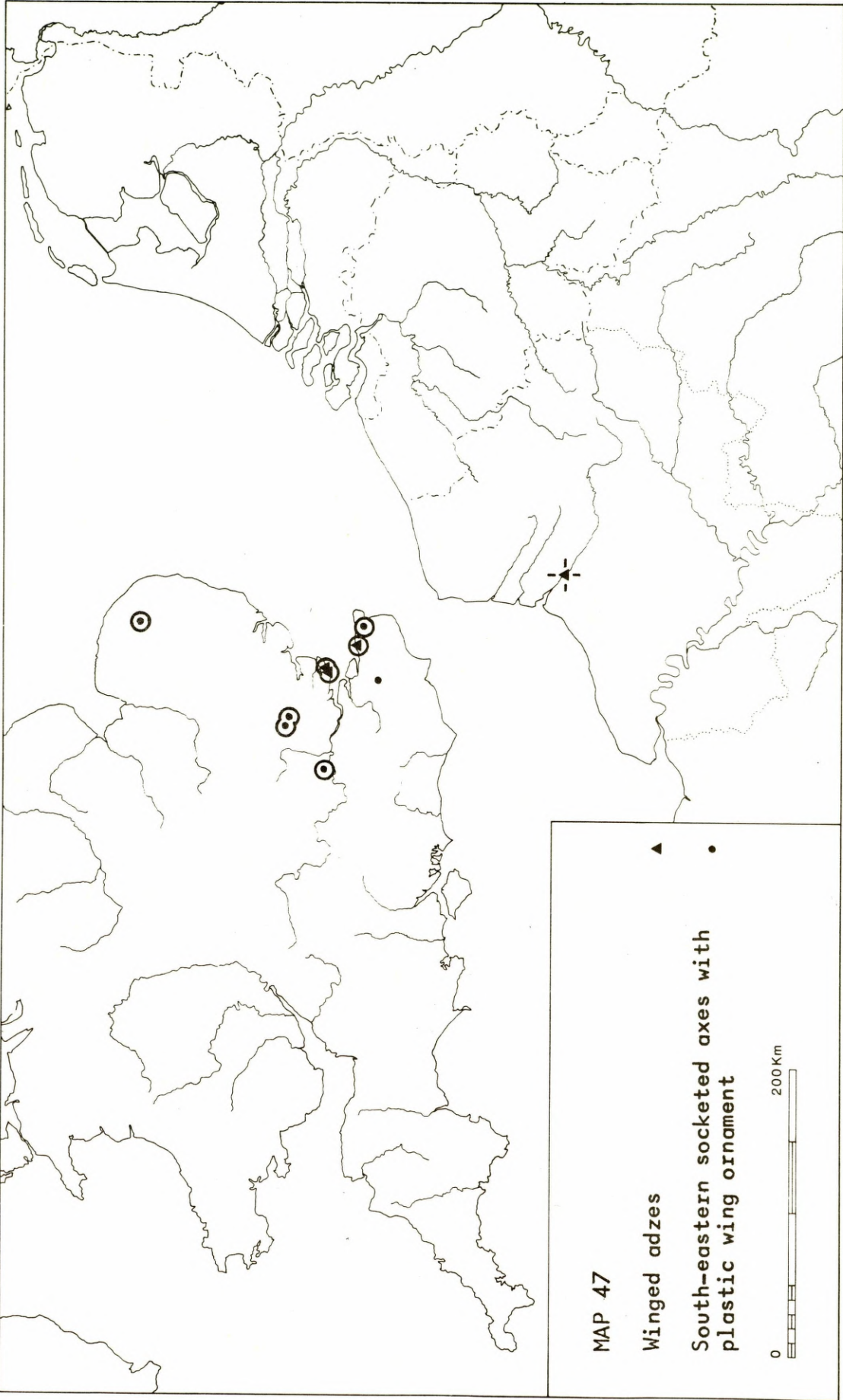


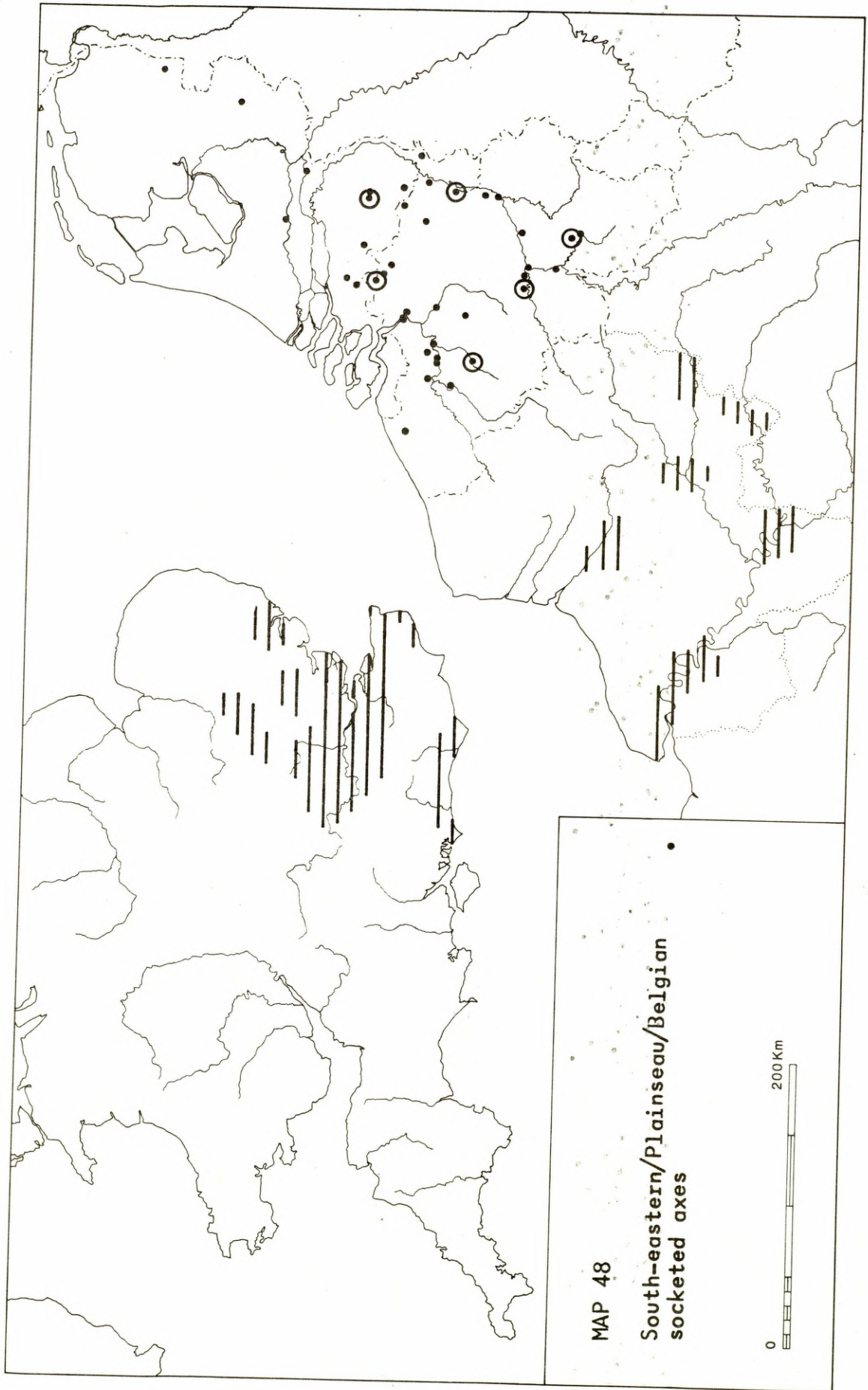




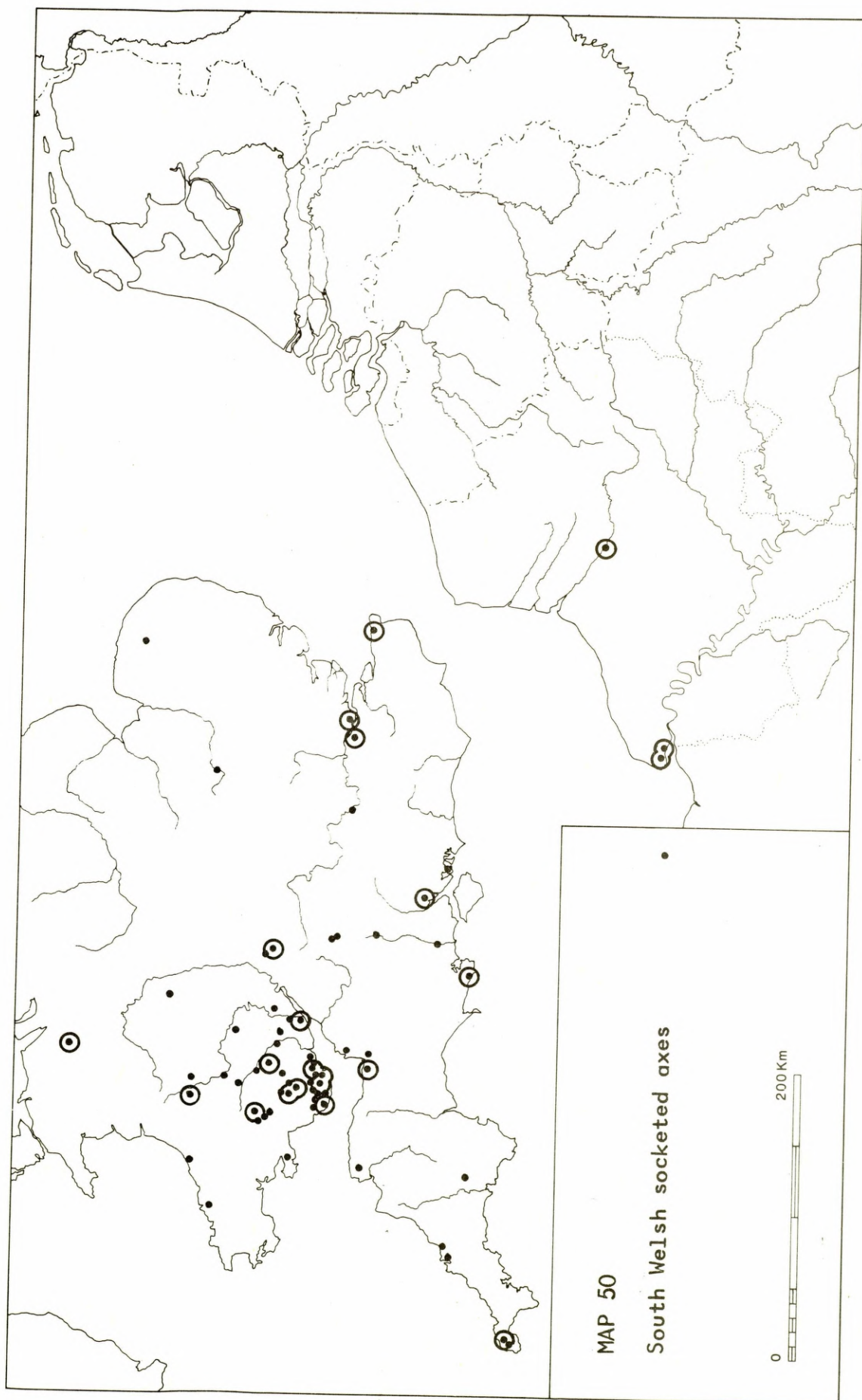


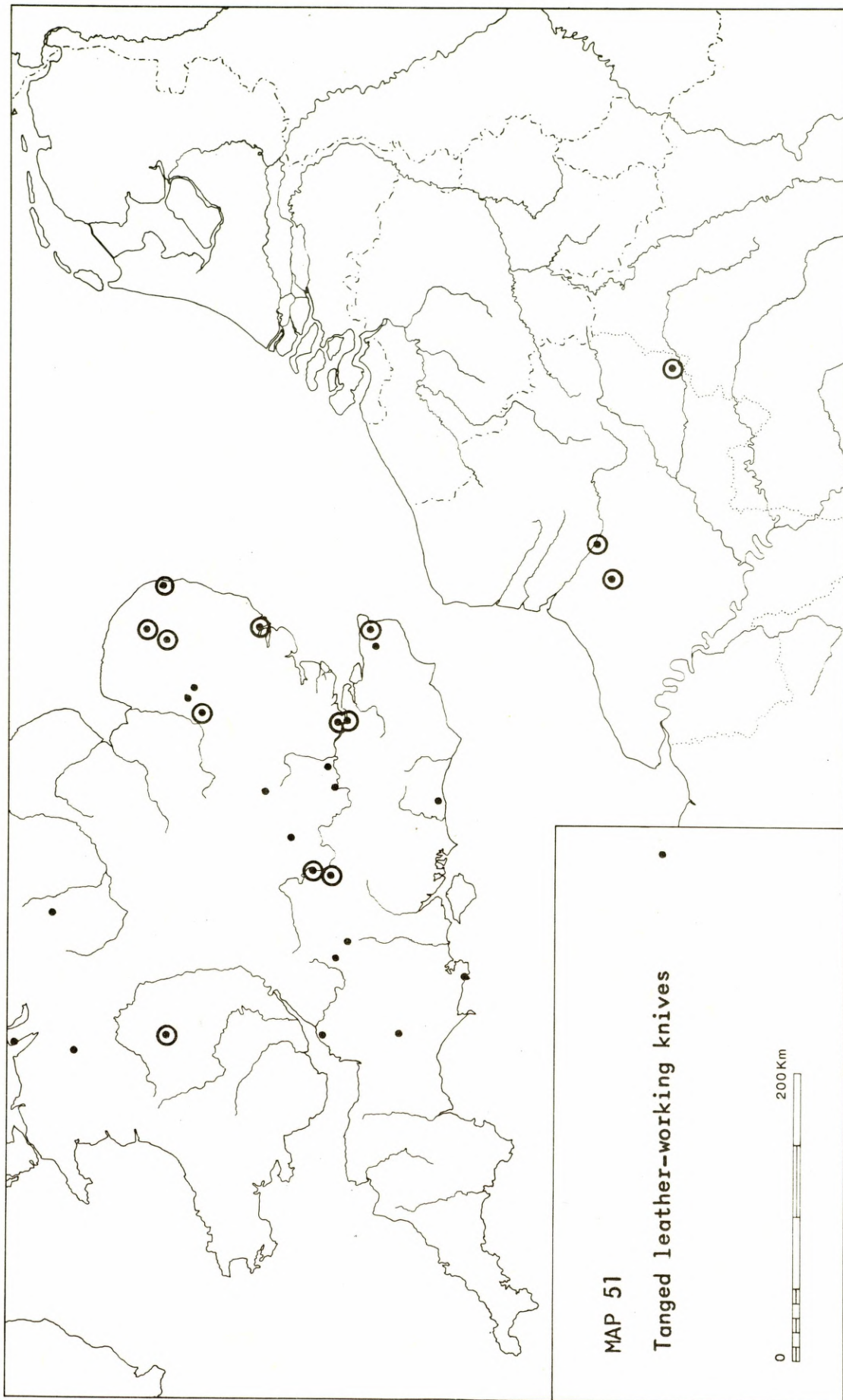


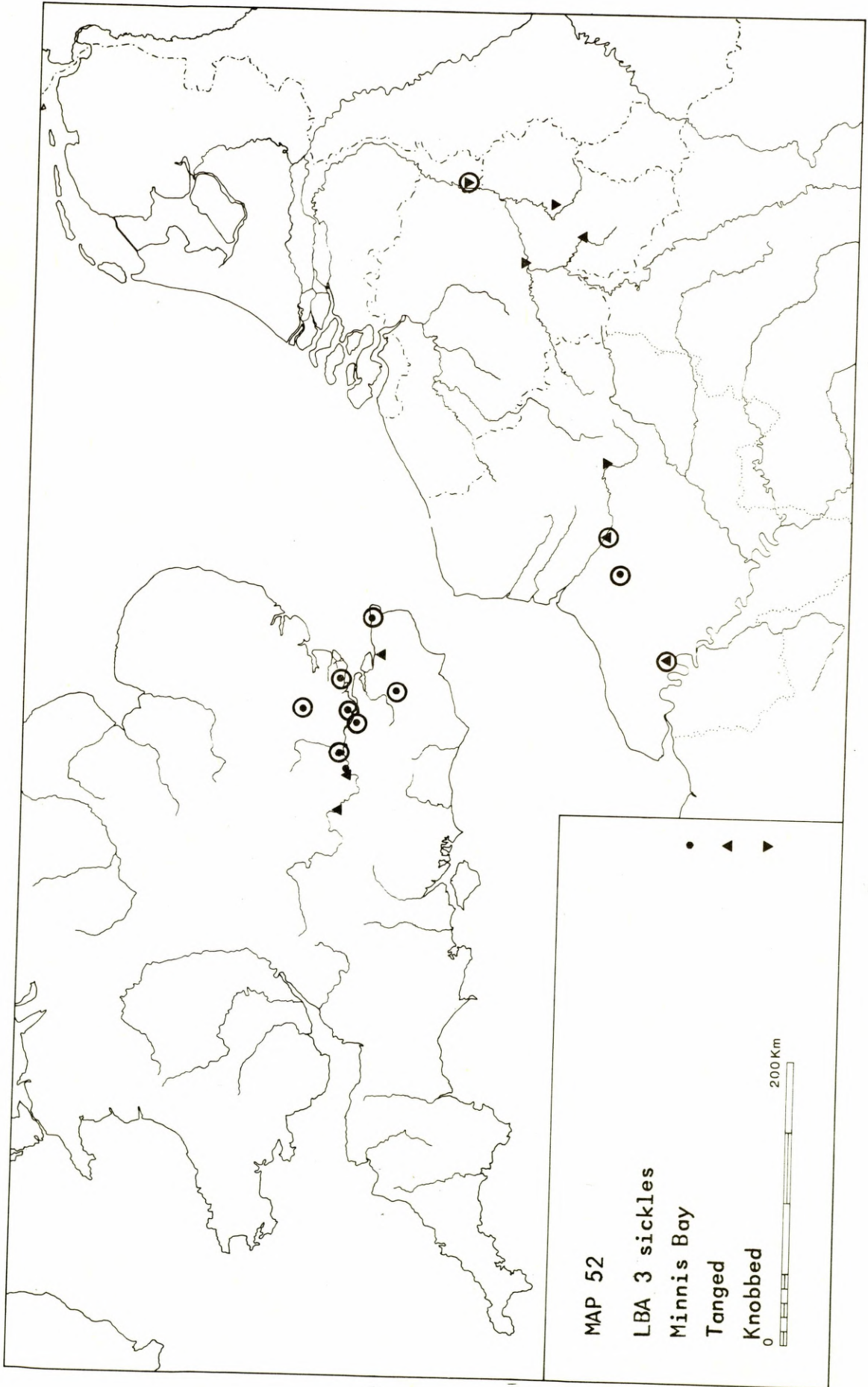


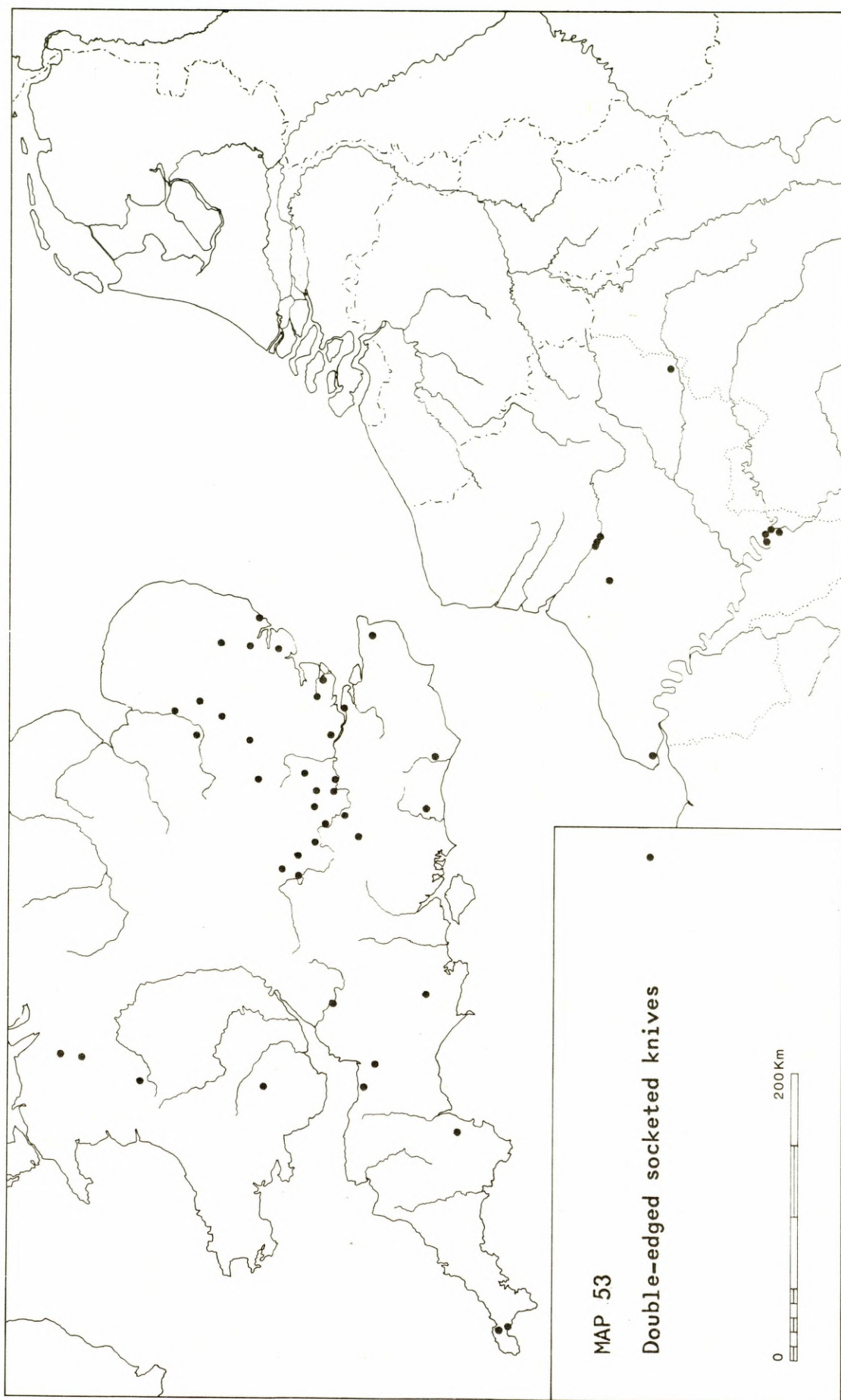


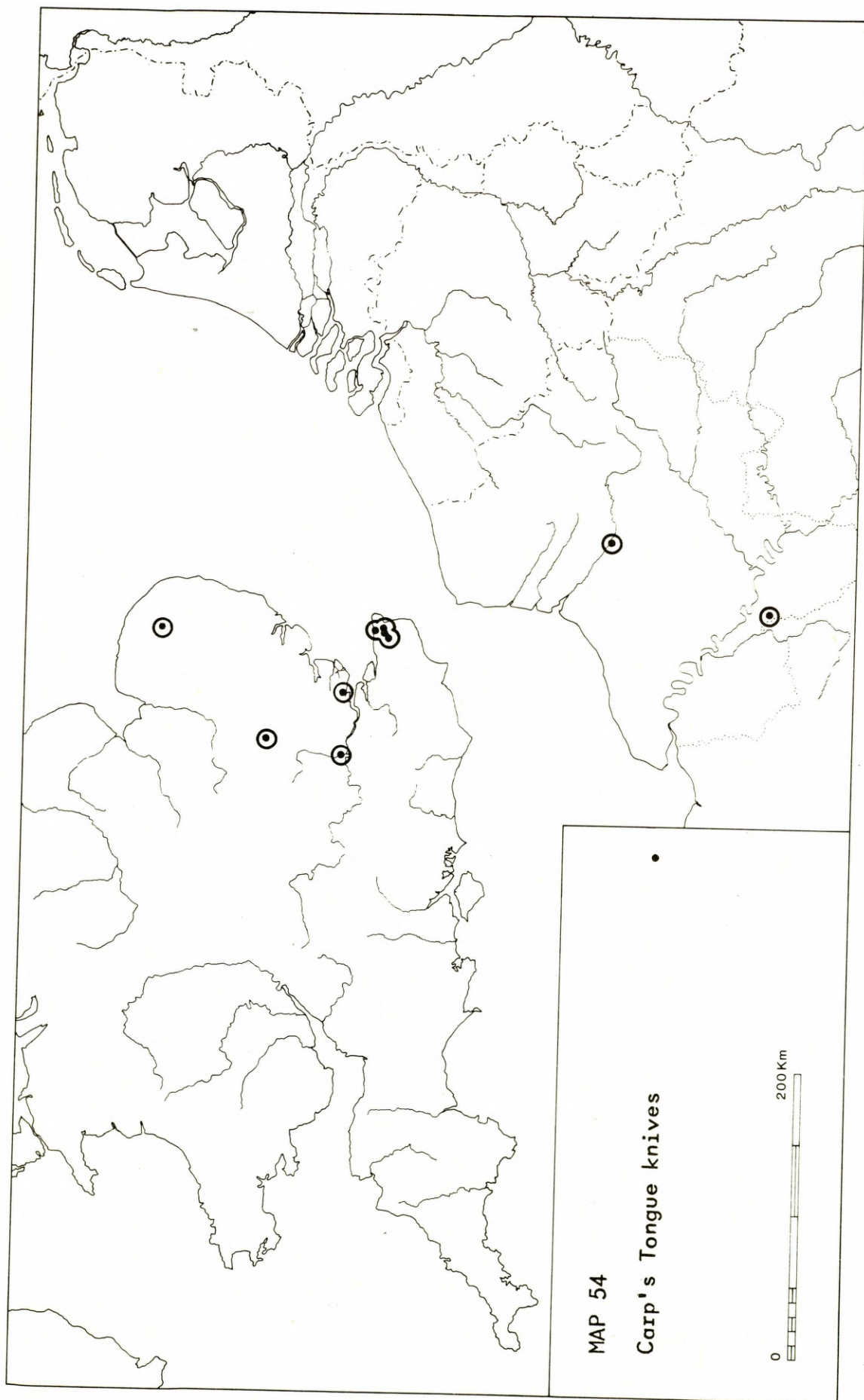


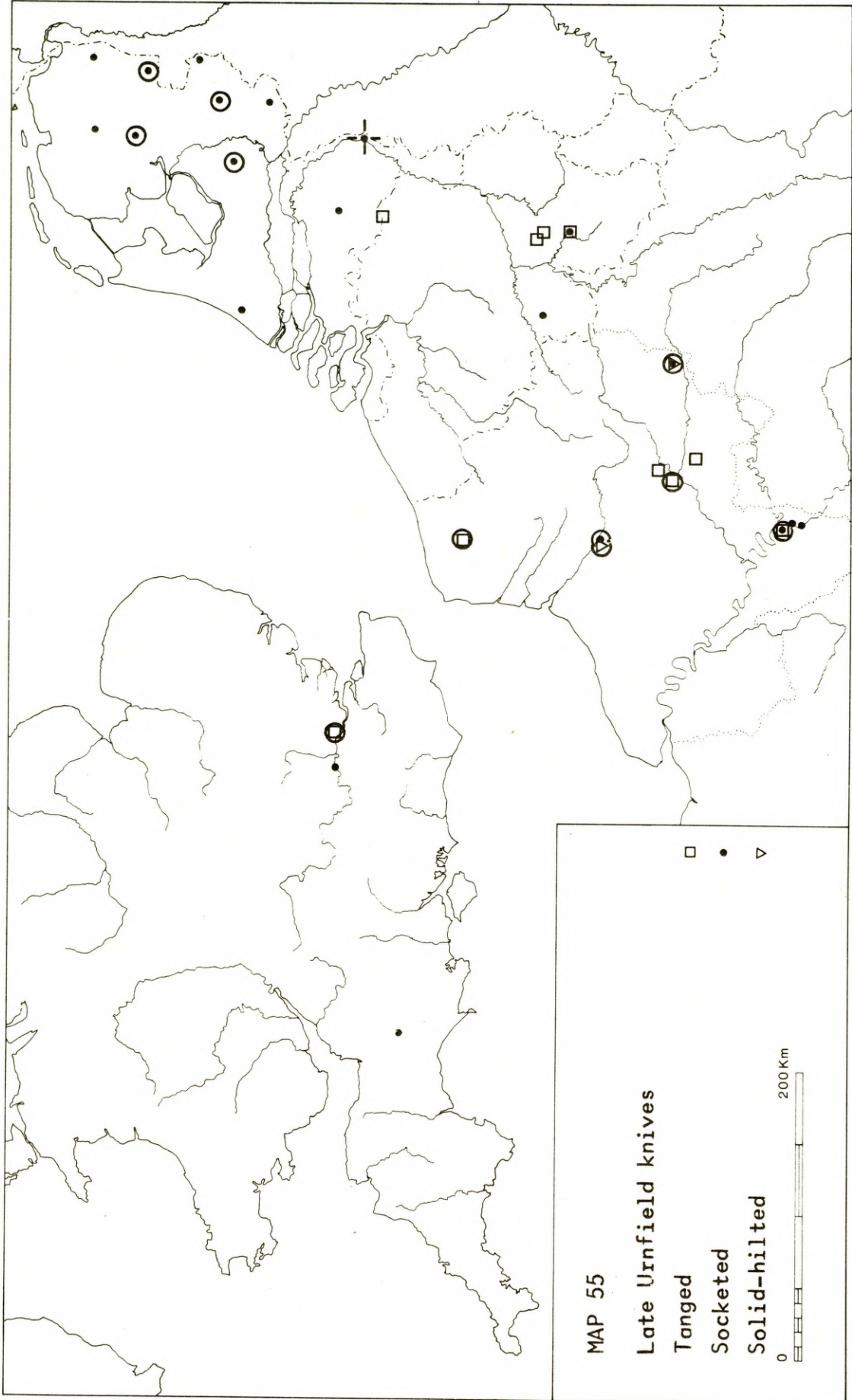


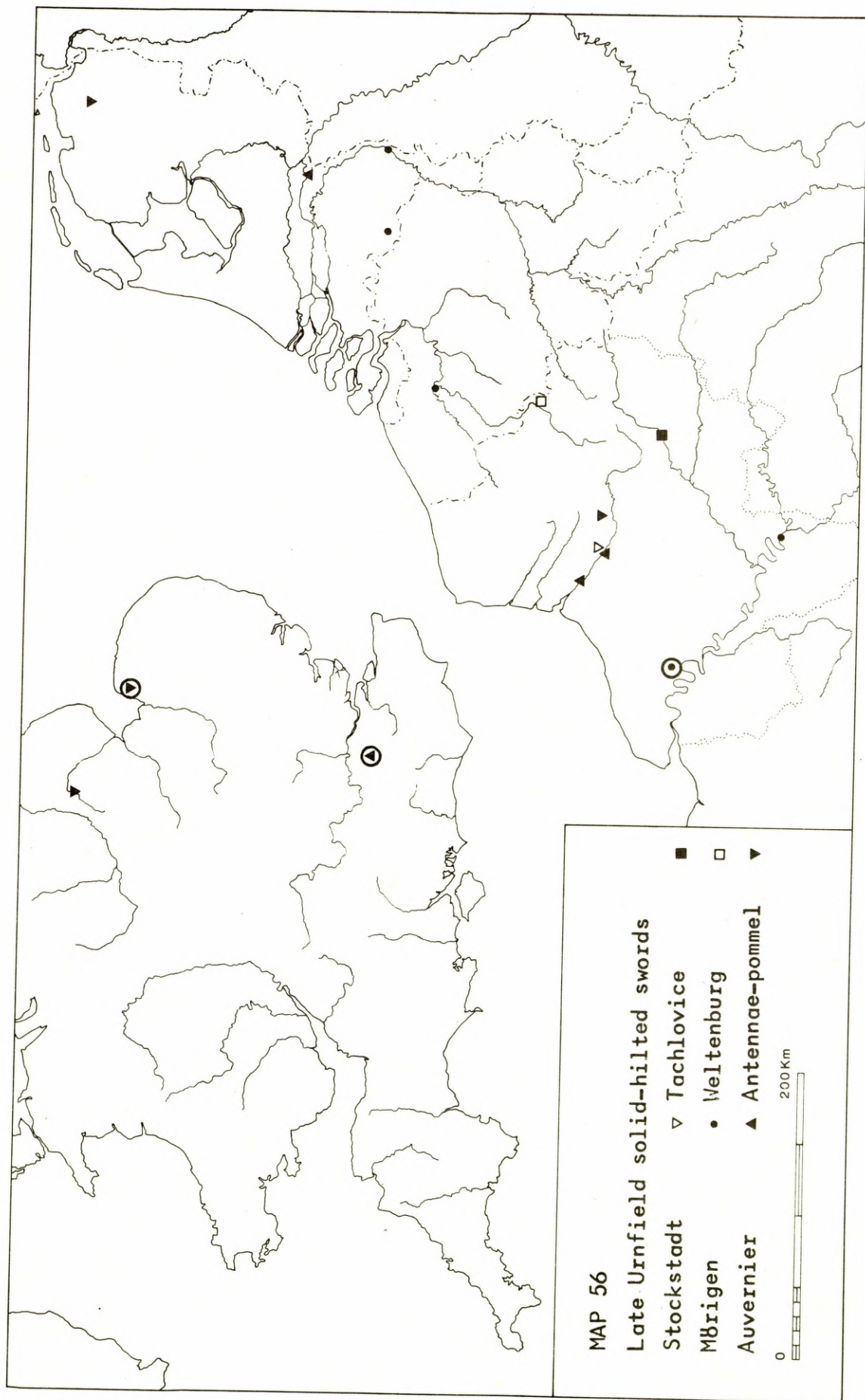


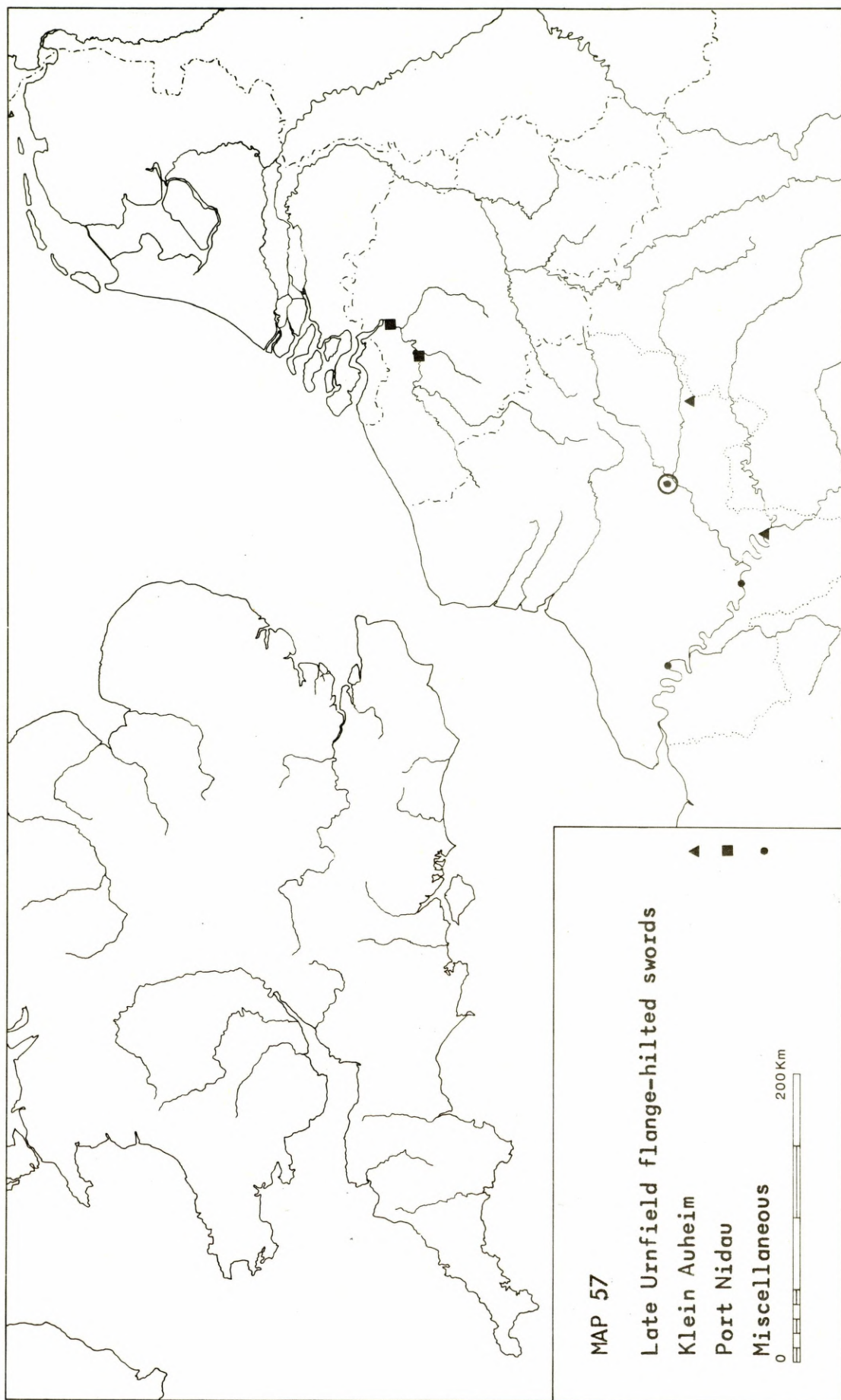


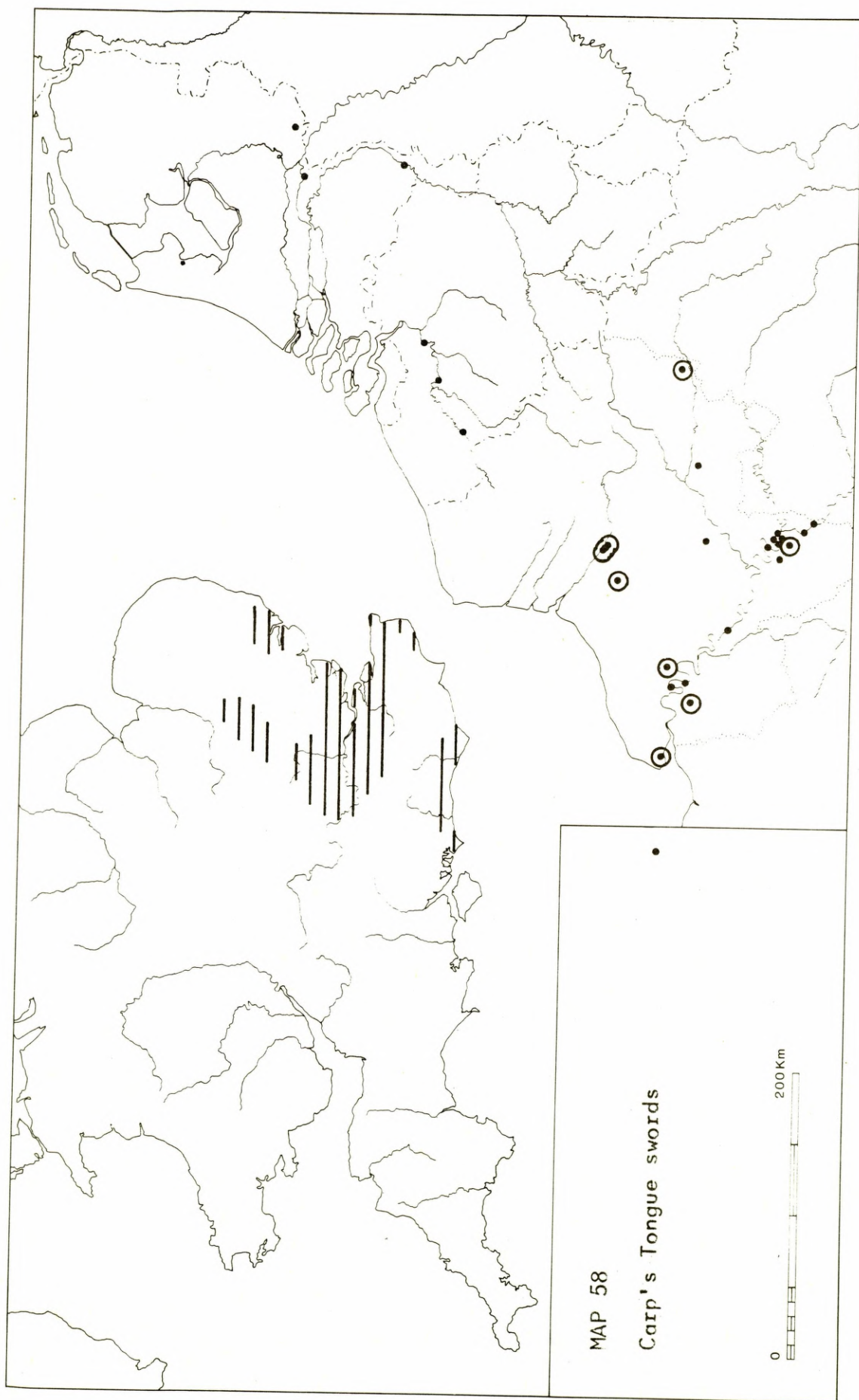


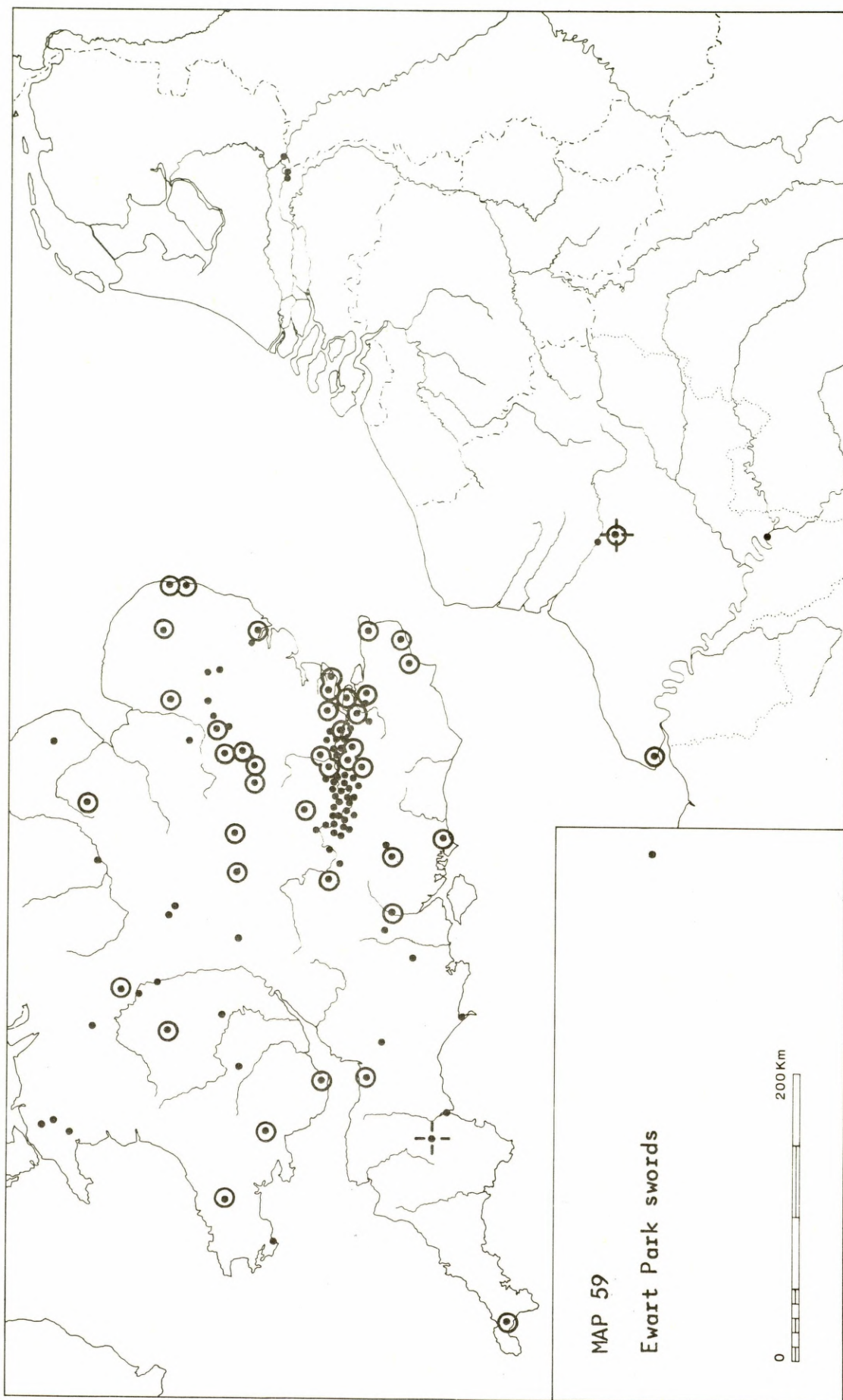


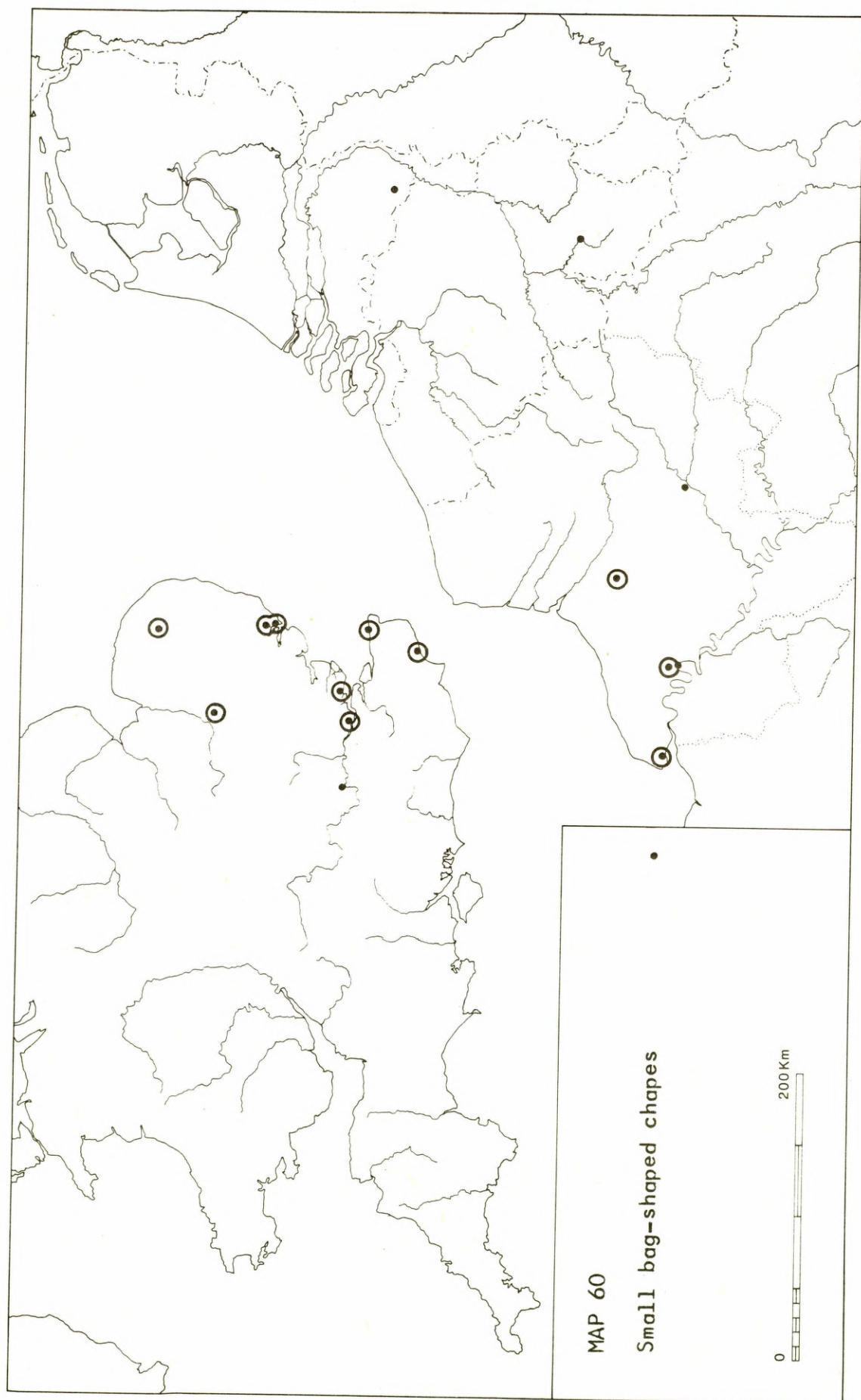


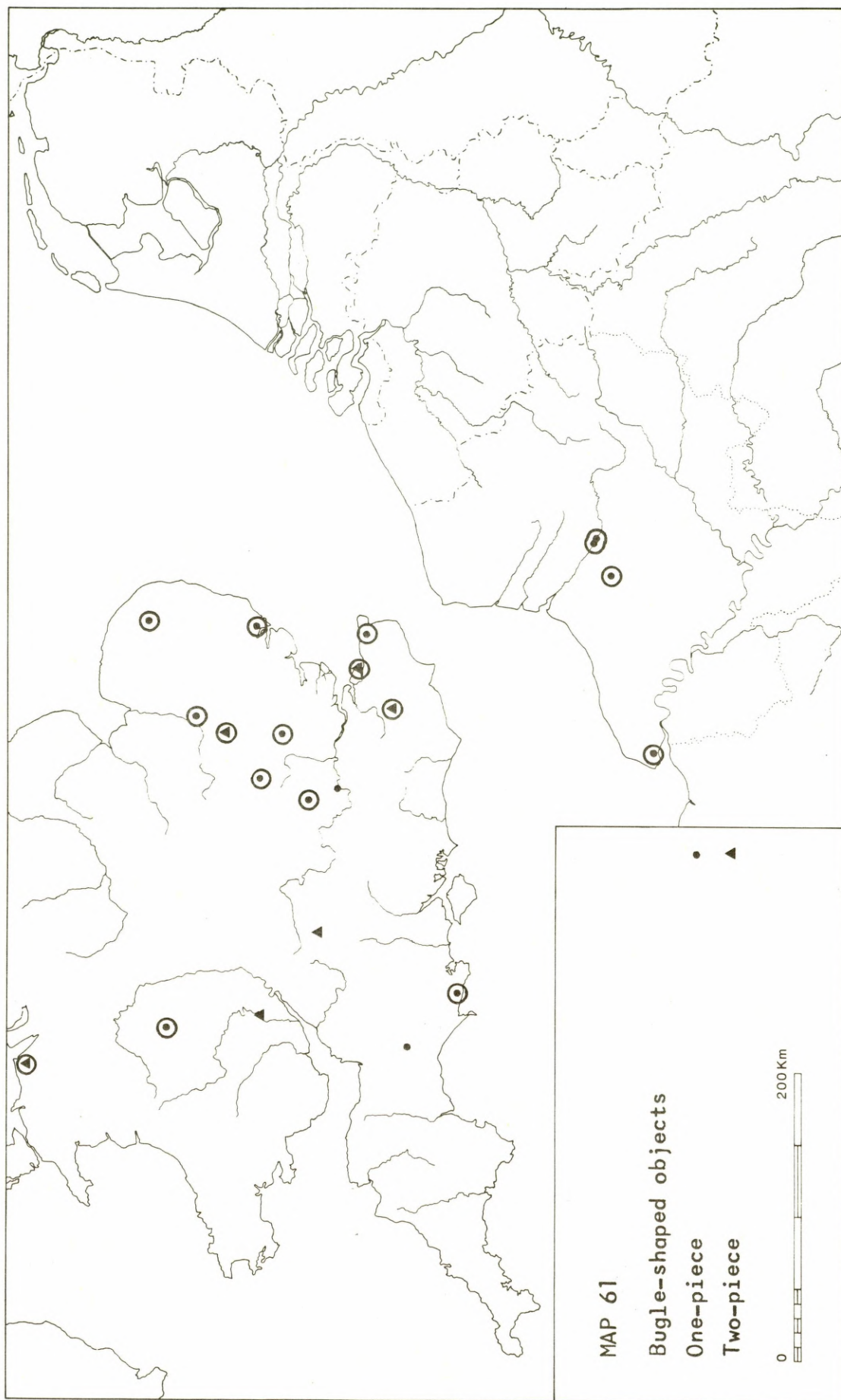


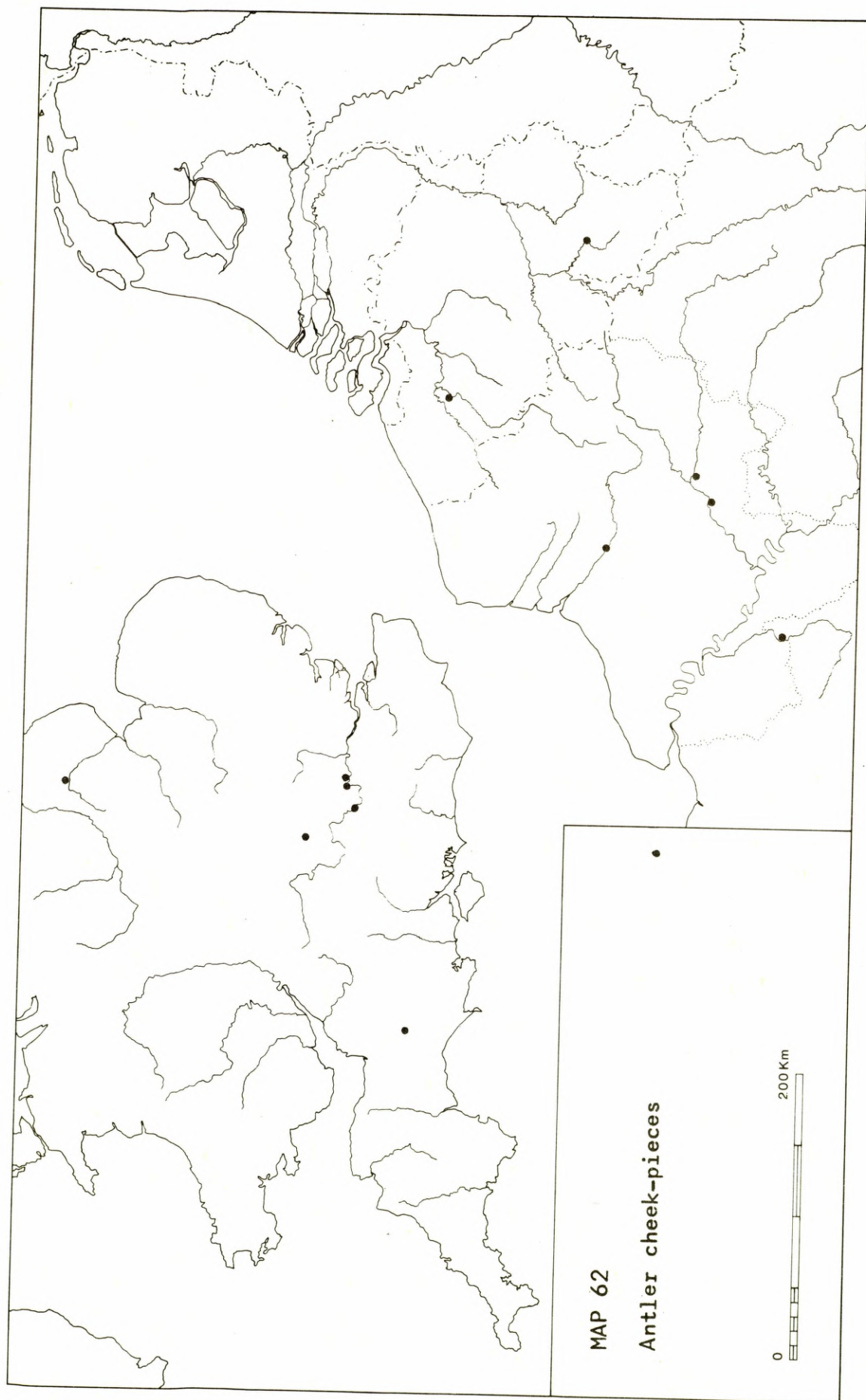


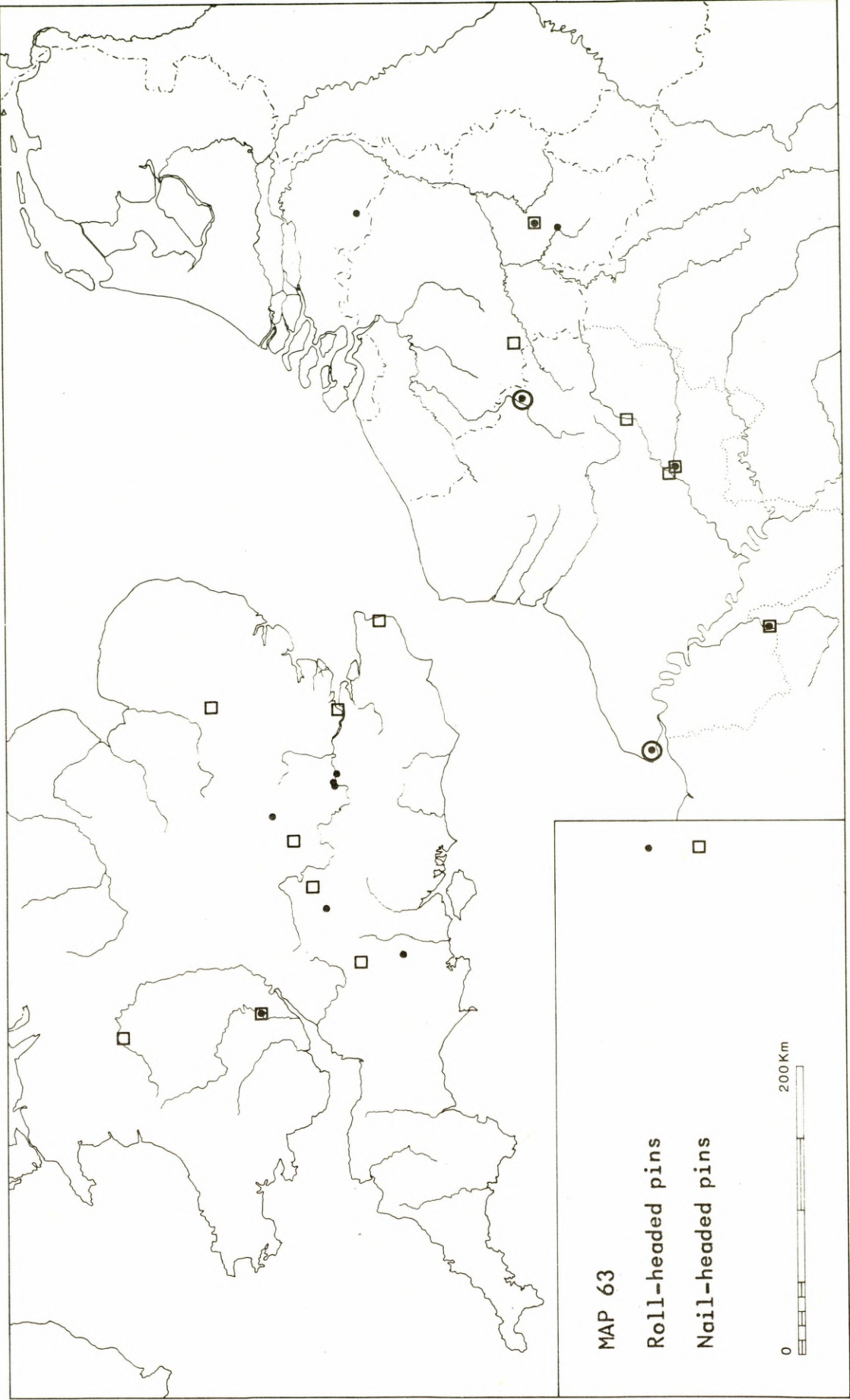


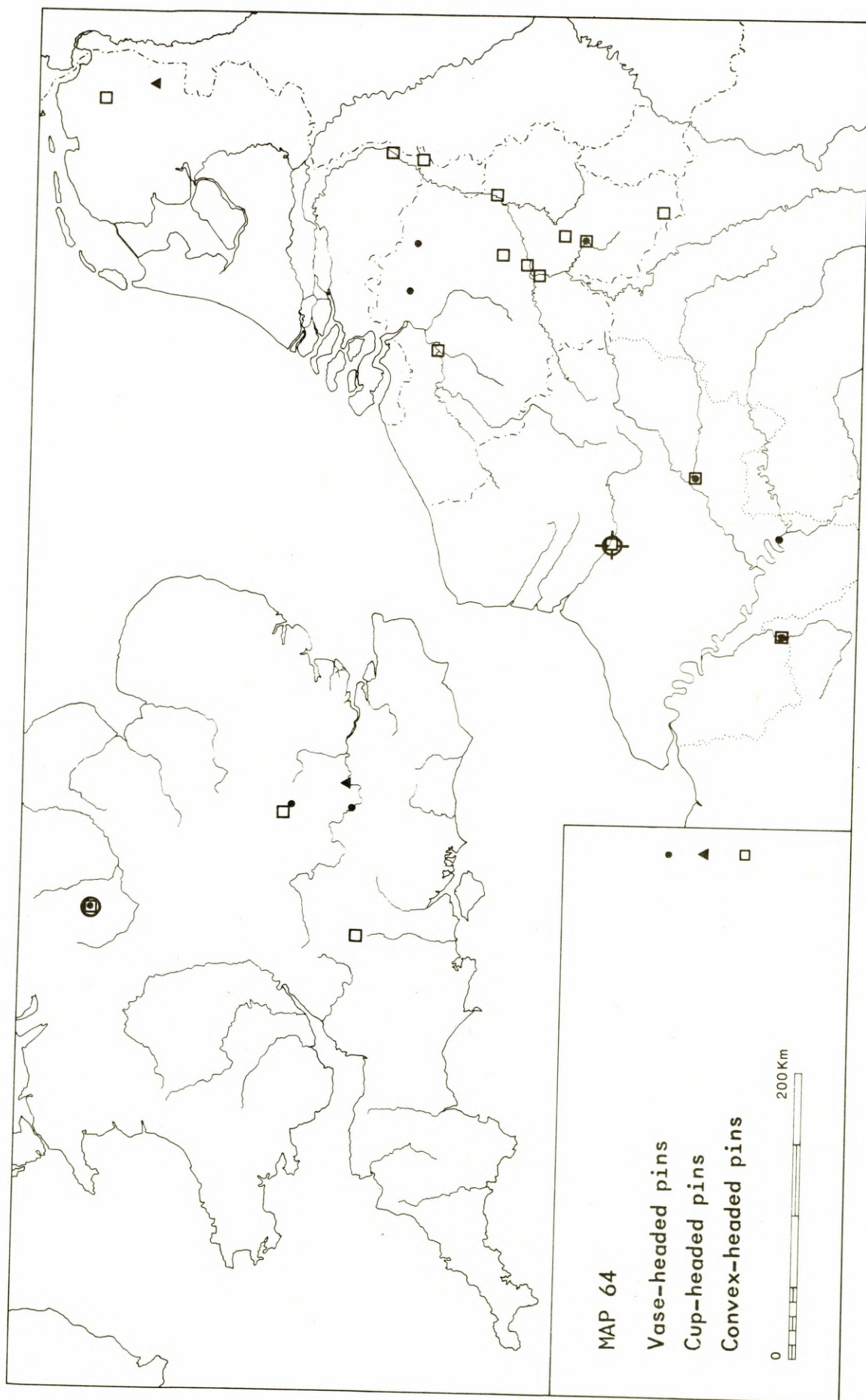


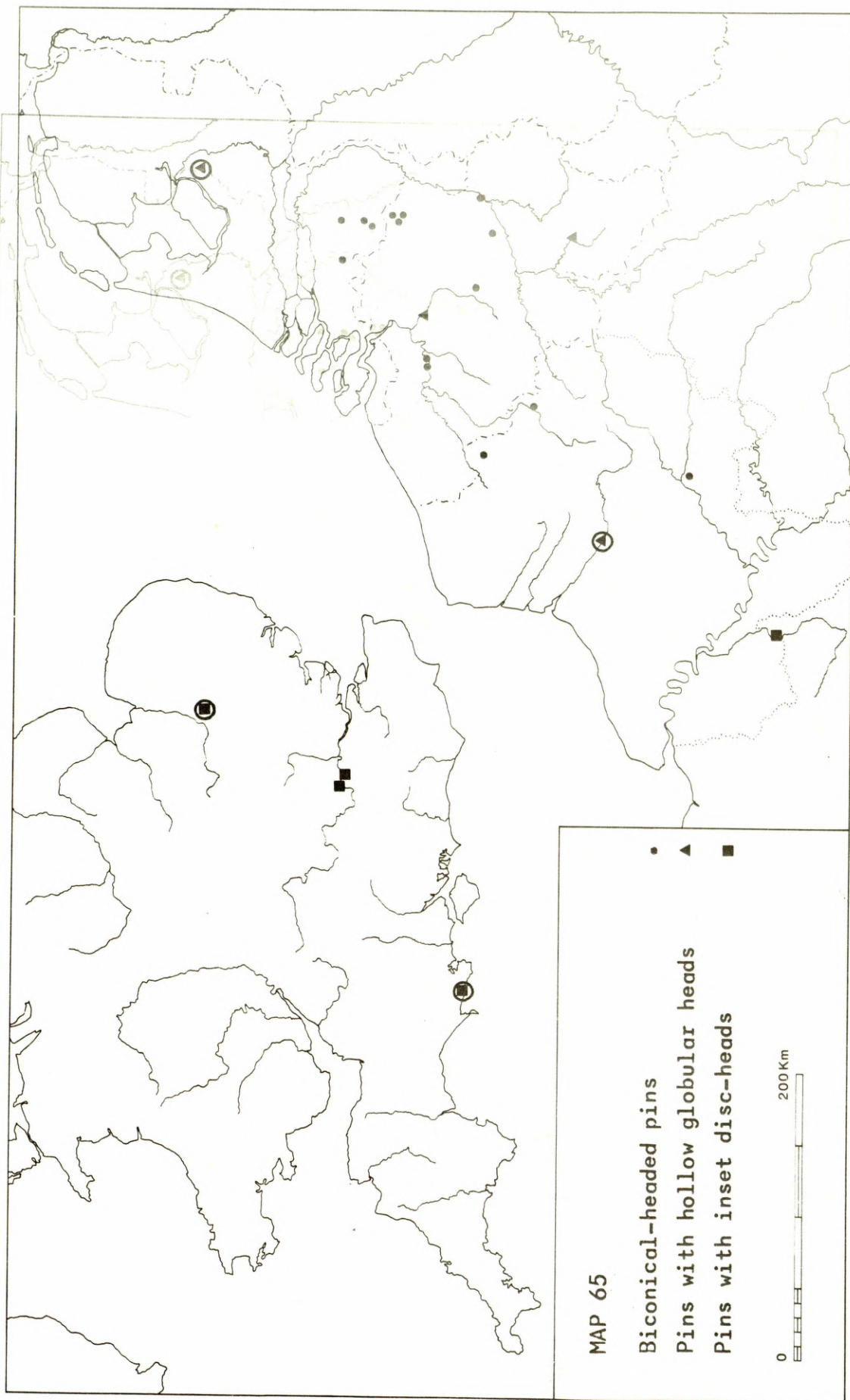


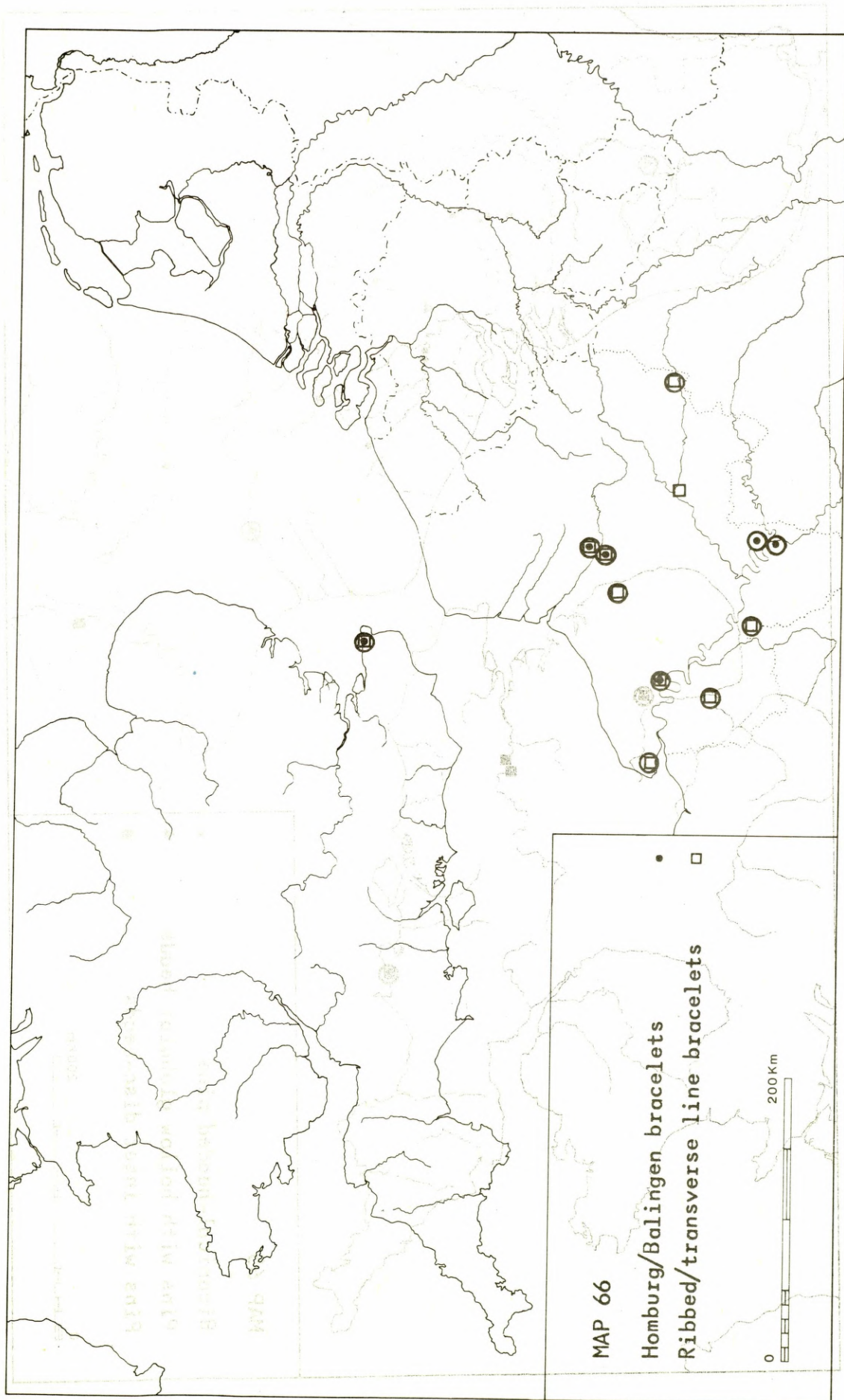












MAP 66

Homburg/Balingen bracelets

Ribbed/transverse line bracelets

0 200 km



